Burvenich *et al. BMC Primary Care (2025) 26:135*
https://doi.org/10.1186/s12875-025-02803-3

BMC Primary Care

RESEARCH **Open Access**

Safety netting advice for acutely ill children presenting to ambulatory care: exploring parents' opinions, ideas, and expectations through focus group interviews

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Abstract

Background Safety netting advice (SNA) is an essential component of the management of acutely ill children in ambulatory care. However, healthcare professionals use a variety of SNA methods, leading to inconsistencies within and across organisations. Much research has explored the perspective on SNA of parents from the UK, but such research is lacking outside the UK context.

Methods We conducted focus groups with Belgian parents of children 6 months to 12 years old, who were recruited through maximum variation sampling. We transcribed the interviews verbatim. Using a combination of inductive and deductive 'in vivo' coding we developed themes from the data. As per the Grounded Theory approach, we reiterated between data collection, coding, and analysis. After participant validation of provisional themes, we constructed the final thematic framework.

Results Through six focus groups with 30 parents, we identified five themes: (1) Relevant background information; (2) To know what to expect, what to look out for; (3) Instructions on child homecare and when to revisit a physician; (4) Physicians who consider parents' perspectives and contexts; (5) A reliable source that provides SNA only when necessary, possibly in a multimodal way.

Conclusions We identified five themes from Belgian parents' views on SNA, aligning with prior UK research. These findings form an evidence base for developing a consensus statement on the content and form of SNA supported by both parents and experts from high-income countries.

Keywords Primary Health Care, Ambulatory Care, General Practice, Paediatrics, Qualitative Research, Focus Groups, Grounded Theory, Communicable Diseases, Safety Netting Advice, Child

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Background

Although most acute childhood infections in primary care are self limiting and rarely serious [1], inappropriate antibiotic prescribing remains high [2]. This contributes to the growing problem of antimicrobial resistance, which directly contributed to 141,000 deaths in high-income countries in 2019 [3] and is recognised as a global health threat [4]. Cabral et al. identified four key conceptual themes influencing parents'decisions to consult and clinicians'antibiotic (over)prescribing for children with respiratory tract infections: the perceived vulnerability of children; seeking safety in the face of uncertainty; seeking safety from social disapproval; and experience and perception of safety [5]. Overprescribing also increases return visits, healthcare-seeking behaviour, associated costs, and physician workload [6, 7]. Evidence suggests that paper safety netting advice (SNA) may reduce antibiotic prescribing, antibiotic consumption, and revisit rates in acutely ill children in high-income countries [8].

In 1987, Roger Neighbour introduced the concept of SNA by posing three questions: 1. “If I am right, what do I expect to happen?” 2. “How will I know I am wrong?” 3. “What would I do then?” [9]. While subsequent research has explored both clinicians’ and parents’ perspectives on essential elements of SNA for acutely ill children [10, 11], several authors argue that more parent-centred research is still needed [12–14].

Much of the high-quality research on this topic has been conducted in the UK [10, 11, 13–19], including several recent studies [15–17]. However, more research is needed in other contexts, such as Belgium, where healthcare affordability, accessibility, and parental consulting behaviour differ.

Therefore, we aimed to explore Belgian parents’ opinions, ideas, and expectations about SNA for acutely ill children in ambulatory care. We conducted focus group interviews (FGs) with a diverse sample of Belgian parents of children aged six months to 12 years and developed a thematic framework.

Methods

This article meets all criteria defined in the COnsolidated criteria for REporting Qualitative research (COREQ) checklist (Additional File) [20] and is reported according to the Standards for Reporting Qualitative Research [21, 22]. The authors used OpenAI’s ChatGPT- 4.0 to improve the clarity and language of this manuscript.

This study is based on a constructivist-interpretivist paradigm, which focuses on the co-construction of knowledge through interaction between the researcher and participants. In this approach, knowledge is not seen as an absolute truth but is understood as something created through social interactions, reflecting the subjective meanings and experiences of participants. Therefore, knowledge in this study was constructed through ongoing interaction with participants. FGs were used as the main method for data collection, allowing participants to engage in discussions where they could share their experiences and respond to each other’s insights. This dynamic process enabled the development of a deeper understanding of the research topic as participants collaboratively shaped and refined their views.

We employed a Grounded Theory approach where data collection, coding, and analysis are intertwined reiterative processes and where patterns emerge directly from the data. By employing Grounded Theory within a constructivist paradigm, we recognise that the researcher actively participates in shaping the emerging theory through their interactions with participants. The researcher’s role is not neutral but is essential to the process, as their engagement helps shape the theory and understanding developed through the study.

Recruitment and data collection

Using maximum variation sampling, we aimed to include participants with a wide range of characteristics and perspectives. Specifically, we sought to recruit parents of varying ages and genders, from areas with different levels of rurality (“city”, “town/suburb”, “rural”) [23], working in both white-collar and blue-collar jobs, with varying numbers of children, and with children of diverse ages. Additionally, we aimed to recruit parents from various ethnic backgrounds (including those not born in Belgium or without solely Belgian nationality), from different socioeconomic backgrounds, and with children of diverse genders, although these specific characteristics were not formally documented. We also aimed to recruit parents with differing healthcare-seeking behaviours and varied experiences related to their child’s history of acute illnesses and the associated use of antibiotics or lack thereof. No eligibility restrictions were applied regarding these characteristics.

From August 2022 to December 2022, we recruited parents in five Belgian cities and towns of varying rurality. Potential participants were approached face-to-face by a researcher (RB, ES, AB, LG) in a well-child clinic, a working-hours GP clinic, an out-of-hours GP clinic, or a hospital-based paediatrician’s office. The researchers initially approached all parents to minimise sampling bias. Subsequently, specific parents were selected using maximum variation sampling to ensure that each FG had a diverse composition. Alternatively, they were recruited directly by their GP. In the latter case, the GP was provided a recruitment guide detailing how, where, and when to approach which potential candidates, as well as some flyers and a waiting room poster.

Eligibility criteria required parents to have at least one child aged six months to 12 years, be sufficiently fluent in Dutch or English for group discussion, and be able to fully understand and sign the informed consent form.

In all FGs, we used the same piloted interview guide and two example cases. These materials were produced by the research team (Additional File). To moderate the first FG, we invited KVR, a female doctor-researcher currently active in university education programme management with expertise in qualitative analysis and FG moderation. All following FGs were moderated by RB, a male GP-researcher who observed the first FG. At least one observer was present during each FG [24]. No one else was present besides the participants and the researchers. At the outset of each FG, the moderator introduced the topic of SNA for acutely ill children and initiated the discussion with broad, open-ended questions to encourage dialogue with minimal prompting. The moderator aimed to maintain a low level of intervention, utilising the interview guide as a flexible framework. The guide included specific questions, intended not for direct answers, but to prompt topics or themes that could also naturally emerge during the discussion. The FGs began in a free-flowing, open-ended manner and gradually shifted—guided by the moderator's input—to more specific questions, such as, 'What are your views on this example SNA folder?'.

Each FG was video- and audio-recorded. The moderator and observers made field notes during the FGs. After each FG, the attending researchers briefly discussed their experiences of the session, identified key elements brought up by the participants, and reflected on lessons that could be applied to the next FG(s). RB was present during all FGs, ensuring consistency and providing an overarching perspective across the sessions. The rotation of moderators across FGs enriched the diversity of perspectives and interpretations. Participants received an email with a link to an anonymous online feedback form after each session. The interview guide remained unchanged; however, to enhance data richness, we identified specific topics or questions that were deemed more (or less) important for the subsequent FGs.

Four researchers transcribed the FGs verbatim (RB, ES, AB, LG) including some relevant non-verbal cues. The transcripts were not returned to participants for comments and corrections. After transcription the audio and video recordings were permanently deleted. We organised FGs until no new information arose, data from a sufficiently diverse sample had been obtained, and discussions became predictable regarding participants'responses to key topics [24]. We did not carry out repeat FGs.

Coding and analysis

Two GP-researchers (RB, DB) independently performed 'in vivo' open, focused/selective, and axial/theoretical coding [24–27] in QSR NVivo release 1.7 [28]. They developed a codebook using a combination of both inductive and deductive coding. Cases of discrepancy were solved by discussion or by a third researcher (JYV). Next, two GP-researchers (RB, JYV) developed themes that represent the participants'experiences, perspectives, and expectations on the content and form of SNA for acutely ill children [24, 27]. Following the constructivist paradigm where understanding is built in collaboration with participants, this involved reflecting on the data, finding patterns, and drawing connections.

We performed participant validation by sharing the final themes and subthemes with all participating parents via email. This allowed participants to review and refine the themes, ensuring that their constructed meanings were accurately represented. We asked them to score the themes on a 6-point Likert scale (strongly disagree to strongly agree) and to provide free comments on each theme. This way, participants could express the significance and relevance of the themes, further contributing to the co-construction of knowledge.

To determine agreement on a theme, we performed the following quantitative analyses: (1) a group median of at least 5 ('Agree'); (2) an agreement proportion of 75%, i.e., at least 75% of the panellists gave a score of 4 or more ('Slightly Agree'); (3) a coefficient of variation (standard deviation divided by mean) at or below 0.5. Consensus among participants was considered present if the interquartile range (IQR) was ≤ 1.75 [29–32]. By integrating these perspectives, we ensured that the constructed themes accurately captured the participants'intended meanings, creating a robust and nuanced analysis that reflects a deep understanding of their subjective experiences.

Only the excerpts included in the article were translated into English, while all coding and analysis were conducted using the original Dutch transcripts.

Results

Participant characteristics

A total of 132 parents registered for the study, 30 of whom participated. The number of parents per FG ranged from three to seven (Table 1). All participants provided written informed consent before the start of the FG. The FGs lasted between 1.5 and 2.5 h (Additional File). The number of participants who were absent from the FGs despite previously agreeing to participate were: three for FG2 (one gave no reason and two fell ill last minute), one for FG4 (gave no reason), and two for

Table 1 Characteristics of participating parents

	Participating parents (*n* = 30)
Gender (female)	20 (67%)
Age group participating parents (years old)	
25–29	5 (17%)
30–34	10 (33%)
35–39	10 (33%)
≥ 40	5 (17%)
Degree of urbanisation[a]	
1 – Cities	10 (33%)
2 – Towns and suburbs	20 (67%)
3 – Rural areas	0 (0%)
Age children (years old)	
0–1	18 (37.5%)
2–6	24 (50.0%)
7–12	6 (12.5%)
Number of children per parent	
1	17 (57%)
2	10 (33%)
3	2 (7%)
4	0 (0%)
5	1 (3%)
Number of participants per FG (date and location)	
FG 1 (10 October 2022 – Leuven, AGORA Learning Centre)	6
FG 2 (24 October 2022 – Leuven, AGORA Learning Centre)	3
FG 3 (23 November 2022 – Aarschot, well child clinic)	7
FG 4 (28 November 2022 – Aarschot, well child clinic)	4
FG 5 (1 December 2022 – Ghent, university meeting room)	5
FG 6 (5 December 2022 – Diest, AZ Diest hospital meeting room)	5

[a] The Degree of Urbanisation (DEGURBA) is a classification that indicates the character of an area. It is based on the share of local population living in urban clusters and in urban centres, and is classified into three types of area: "city", "town/suburb", "rural". FG = focus group interview

FG5 (gave no reason). The majority of parents identified as women, were between 30 and 39 years old, and lived in a town/suburb. Most of the participants' children (48 in total) were 2–6 years old. One parent provided feedback via the anonymous online feedback form, which was irrelevant to our study.

Themes

The authors identified five preliminary themes, with data from both male and female participants across various regions and age groups contributing to each theme. A detailed coding tree is available in the Additional File.

During the participant validation, 20 parents provided feedback on the five preliminary themes (Table 2, Additional File). The median agreement score ranged from 5 to 6, the agreement proportions were between 85 and 100%, the coefficient of variation ranged from 0.13 to 0.23, and the IQRs were between 1.00 and 2.00. Consequently, agreement and consensus were achieved for all themes, except theme 5 where we did not reach consensus (IQR = 2.00). Two parents provided one free comment each (themes 1 and 5) and one parent gave three free comments (themes 1, 4, 5). Based on this feedback, we identified five final themes (Table 3) that were almost completely identical to the preliminary themes.

Relevant background information

Parents expect the SNA to provide them with relevant background information on five general topics. First, they wish to be informed on how to avoid having to visit a physician in the first place ('prevention'), and on what the indications for consultation are. The quotes below show the collaborative interaction between two parents on the value of, in this case, a checklist that helps them decide whether to visit a doctor or manage their ill child at home.

Table 2 Participant validation

	Agreement score (median)[a]	Agreement proportion[b]	Coefficient of variation[c]	Consensus (IQR)[d]	Free comments[e]
Theme 1	5/6	100%	0.14	1.00	"Certainly [of] good use and [the provider of SNA should] discuss limitations of [technical] examinations." "Overlap for babies and toddlers with website [of]Kind en Gezin[f]. [It would be] also good to know what are reliable online sources."
Theme 2	6/6	90%	0.17	1.00	/
Theme 3	6/6	100%	0.13	1.00	/
Theme 4	5/6	85%	0.23	1.00	"Difficult to estimate at the beginning and having one and the same physician [i.e., GP] is a requirement. [Physicians taking into] consideration [parents' perspectives] is limited to the extent that the well-being of the child remains the priority, [it is] also necessary to sometimes try and explain to the parents why some ideas are 'not correct'."
Theme 5	5/6	90%	0.22	2.00	"Especially for new parents (i.e. parents with less experience require this [category of SNA]) [a] multimodal way [of delivering SNA] seems to me like a large administrative burden." "Yes, but [make sure] that it remains attainable for the physician in terms of workload."

Abbreviations: SNA safety netting advice, *IQR* interquartile range

[a] Agreement score on a 6-point Likert scale, should be at least 5 for agreement

[b] Agreement proportion = proportion of panellists that at least slightly agreed, should be at least 75% for agreement

[c] Coefficient of variation = standard deviation divided by mean, should be at or below 0.5 for agreement

[d] Consensus among participants is determined by an IQR ≤ 1.75

[e] Free comments translated from Dutch to English by RB

[f] Kind en Gezin' (ENG: 'The Child and Family Agency') is a well child clinic agency of the Flemish Government

> *F5P5. "What would help me personally would be a checklist or something. Not as a chatbot – I find that terrible, because, yes, and certainly if it is based on AI technology. But for me, in many cases, a checklist to actually just evaluate whether this is something to go to the doctor with or whether you could solve this with Perdolan [paracetamol] or Nurofen [ibuprofen], [or by] giving something else. I would find that truly really valuable."*

> *F5P2. "Yes and for example, if it's at night before bedtime [...] if I'd have something like that, then I think that I would feel more reassured, like, we'll see tomorrow."*

Second, parents want to see the following three questions about diseases and fever answered: (1) "How often and when do fever and common childhood illnesses occur?"; (2) "How severe are they?"; (3) "How can you best manage them as a parent?" Third, parents desire transparency about the diagnostic process and the associated diagnostic uncertainty. Fourth, parents expect SNA to entail some basic information on antibiotics: how they work, when they are (not) required, and what the potential alternatives to antibiotics are. Finally, they would like to know what kind of information technical examinations can provide and when they are indicated. Examples of such further tests are blood works, a throat swab, ultrasound, and an X-ray.

To know what to expect, what to look out for

It is important for parents to know how their child's illness will most likely progress. The quotes below again illustrate an interaction between two parents expressing their desire to know what to expect and what to look out for. If there are several likely scenarios, they want to learn about each of them.

> *F4P2. "I would like to know what the normal duration of a disease is or how long symptoms can remain, huh, present or when, yes, when it is bad enough to, yes, so, or [go] back [to the doctor] or to take action. Because they [i.e., the doctor] can say you should keep irrigating [the nose] or waiting or trying. Or when do I need to take action? That way you have a point of reference."*

> *F4P3. "Yes, indeed. The expected symptoms, huh! The symptoms, like you say and, yes, what is normal and what is not. Is it going to get worse, is it going to remain the same, [...] do we have to go to A&E or go back [to the doctor]?*

Further, they want to know about so-called 'Red', 'Yellow' and 'Green flags'. These terms were defined by the

Table 3 Thematic Framework of what parents expect from safety netting advice for their acutely ill child presenting to ambulatory care

Themes	Subthemes
They want:	
1. Relevant background information	Disease prevention; indications for consultation (knowing when to make an appointment and when not to) Basic disease epidemiology and management: how often and when do fever and (common) childhood illnesses occur, how severe are they, how can you best manage them as a parent? The diagnostic process and the associated diagnostic uncertainty Antibiotics: how they work, when they are (not) indicated, and what alternatives there are to antibiotics? Technical examinations: what they can(not) tell us, when they are (not) indicated? E.g., blood works, throat swab, ultrasound, X-ray, etc
2. To know what to expect, what to look out for	Red flags: what clinical signs and symptoms in the acutely ill child to be concerned about? Yellow flags: emotional states in one or both parent(s) that might compromise their ability to adequately care for the child. E.g., being concerned about the illness to a detrimental extent; having no idea about how to best manage the child's illness and being afraid you might make it worse, like when two physicians provide different advice Green flags: what clinical signs and symptoms in the child are positively reassuring? What to expect: how will the child's illness most likely progress? If there are several likely scenarios, parents want to know about them all
3. Instruction on child homecare and when to revisit a medical professional	Continuity of medical care: which medical professional to consult when Practical instructions for further actions so that parents know exactly what to do in which circumstances. E.g., a decision tree, a step-by-step action plan, and/or a delayed prescription Homecare provided by parents
4. The physician to consider the parents' perspectives and contexts	Parents' ideas, concerns, and expectations, e.g., concerning their child's illness, the management plan, or what to expect in the next few days Parents' own perception of the goal of safety netting advice: empowerment, reassurance, and memory aid Impact of the child's disease on the parents and the dynamic between them. E.g., tension due to miscommunication or differing viewpoints
5. A reliable source that provides safety netting advice only when necessary, possibly in a multimodal way	Reliable source: preferably a physician, but not necessarily a physical person (e.g., online, pamphlet) Only when necessary: e.g., for first-time parents, not for each and every minor infection like the common cold The option of multimodality: this allows parents to access it at different moments in time, in different ways, and in different places. E.g., given orally by a physician, on a leaflet, and on a website or app provided with photos and/or videos

researchers, drawing on input from the parents and inspired by a similar flag system used in the management of low back pain [33]. They are unrelated to the NICE traffic light system which was recently found to not be suitable for use as a clinical tool in general practice [34]. 'Red flags' are clinical signs and symptoms in the acutely ill child to be concerned about. 'Yellow flags' occur when one or both parents are in an emotional state that might compromise their ability to adequately care for the child. Examples are parents being concerned about the illness to a detrimental extent, and parents having no idea about how to best manage the child's illness and being afraid they might make it worse, like when two physicians provide different advice. 'Green flags' indicate a child's clinical signs and symptoms that are reassuring.

Instruction on child homecare and when to revisit a physician

Knowing which health care professional to consult and when to do this after the initial visit is important for parents to get a sense of continuity of care for their child. They also expect SNA to contain practical instructions on how to care for their child at home and on what to do in which circumstances. E.g., a decision tree, a step-by-step action plan, and/or a delayed antibiotic prescription. The following quotes show the importance of SNA being specific about to revisit a physician and what it means to ‘keep an eye on things’ when caring for an acutely ill child.

> *F2P1. So, that is what safety netting advice should ideally provide, to me personally, a reassurance in terms of: which symptoms do we need to keep an eye out for and what are truly the critical alarm signals that indicate we have to revisit a physician. [...].*

> *F2P2. I would like [the doctor] to tell me more concretely that my child can have a fever for four to five days and that we do not have to give medication. I am also not sure what it means to ‘keep an eye on things’.*

Physicians who consider parents’ perspectives and contexts

Parents state that a key part of SNA would involve physicians exploring the parents’ ideas, concerns, and expectations. Topics the doctors should ask the parents about are their views on the child’s illness, the management plan, and/or what to expect in the next few days. A doctor should also enquire about the parents’ own perceptions of the goal of SNA. In our FGs, parents reported the goal of SNA to be twofold. First, SNA as a source of parent/patient empowerment and reassurance. Second, SNA as a way of better memorising what the doctor said during the visit (memory aid), as parents reported it is difficult to retain this information while consulting with an acutely ill child. We also found that the healthcare provider should screen for the psychological impact of the child’s disease on the parents separately and/or the dynamic between them. Significant tension between parents due to miscommunication or differing viewpoints must be picked up.

> *[F1P4 tells their story of how both the A&E staff and the GP failed to reassure them that nothing bad is happening to their acutely ill child.]*

> *F1P5. So, you were not really reassured or were you?*

> *F1P4. “Sometimes you are dragged along [...] worrying about your child by another person [i.e. their partner]. Sometimes I find myself worrying along [with the other person]. In hindsight for no reason. Hm, so.”*

> *Moderator FG1. “But if I understand correctly, it is not enough to simply say: “If it does not improve by then, then come back.?”.*

> *F1P4. “Yes, I say it, that is, that is. For me that would be enough. Not for her.”*

> *Moderator FG1. “Well, I would like to hear what you ....”*

> *F1P5. “May I jump in on that?”.*

> *Moderator FG1. “Yes, that’s the idea.”*

> *[F1P5 tells the group that they feel very satisfied with the care provided by their GP practice for their ill child. They value receiving guidance on signs that might indicate something more serious and being able to consult the doctor whenever they’re worried.]*

A reliable source that provides safety netting advice only when necessary, possibly in a multimodal way

Parents unanimously and ubiquitously stressed that SNA should be provided by a reliable source, e.g., officially recognised websites or pamphlets or, ideally, a physician. SNA is most relevant for first-time parents. It should not always be given, e.g. in the case of a minor infection like the common cold. Parents prefer the option of ‘multimodality’, allowing them to access SNA at different moments in time, in different ways, and in different places. Examples of different modalities include oral SNA, paper SNA, and online SNA (website or app) with photos and/or videos. The quote below clearly indicates the importance of reliable SNA, even if the GP is good and reliable.

> *F2P3. “I have a good GP I can rely on. But, imagine I could access reliable information, and then, I don’t know, with five questions could attain an advice or, on a website, could find general advice or something similar of which you know that it is reliable. That is mostly it, I think, that you know, okay, this, this, which is reported here is correct.”*

The quotes below illustrate a discussion parents from the same FG had about different SNA modalities.

> *F2P1. “Somewhere an online location or even an application where you’ll easily know whether, yes, a decision tree is perhaps not bad. [...] Certain indications based on which you would better consult a doctor. I think that would help enormously, yes.”*

> *F2P2. “I think that is a possibility, but yes. For me personally, that is not necessary. I would rather the people work a bit more and give the sources, the scientific sources, [instead] of making videos.”*

> *F2P3. “I think that that is personal preference and that that, yes, that I ... that, I just notice that some people very much enjoy seeing something and then can save it better. Others prefer the format of a pod-*

> *cast, because then you can you can click it on the go, wherever and you hear it in your ears, and you save it in that way. And others still prefer reading things, are going to then, indeed, then check the sources and go to the original book or the original research that it comes from.*

Discussion

Summary of findings

From six FGs across Belgium, we identified five themes regarding parents'expectations of SNA for their acutely ill child: (1) Relevant background information; (2) To know what to expect, what to look out for; (3) Instructions on child homecare and when to revisit a physician; (4) Physicians who consider parents' perspectives and contexts; (5) A reliable source that provides SNA only when necessary, possibly in a multimodal way. Participant validation provided additional valuable input and confirmed agreement with the proposed themes.

Comparison with existing literature

Neighbour's 1987 three-part definition is reflected in themes 2 and 3 [9]. While Neighbour focused on the physician's perspective, using I-statements, our study emphasises a parent-focused approach.

Building on this, Almond et al. (2009) outlined core SNA recommendations from UK physicians for consultations with acutely ill children, many of which align with our findings [10]. However, parents in our study wanted clarity not only on diagnostic uncertainty but also on the diagnosis itself (theme 1), emphasising the role of patient education in effective SNA. Parents unanimously preferred multimodal SNA (theme 5), contrasting with Almond et al.'s lack of consensus on the timing or method (written vs. verbal) of SNA. Our study suggests that SNA can be delivered by non-physicians and accessed independently of a consultation via websites or apps, provided it is (co-)constructed with input from experts and physicians—an insight absent in Almond et al. Finally, while Almond's physicians mentioned "What should be recorded in the medical notes", this was not discussed by parents in our study.

Our study largely replicates Jones CH et al. (UK, 2014) in Belgium [11], supporting the feasibility of an international SNA consensus. A unified framework would ensure consistent SNA delivery, crucial as global travel with young children increases. The subtheme"Preconsultation education"in Jones CH et al. aligns with our theme 1, highlighting the connection between patient education and SNA. Better parental understanding of illness severity could reduce unnecessary consultations and antibiotic prescribing [5, 8].

Neill et al.'s 2015 narrative systematic review, found that information resources to help parents decide when to seek medical care for an acutely ill child under five need to be relevant and comprehensive, delivered in a non-stressful environment such as the home, and coproduced with parents [14], aligning strongly with our findings. Their 2014 exploratory qualitative study with UK parents highlighted the need to consider internet access and literacy, similar to our theme 5 [18]. Their 2016 work further linked parental knowledge and experience to illness severity assessment, supporting theme 1 [19].

Jones D et al. (2019) reviewed SNA definitions and proposed a unified primary care approach [12]. Our study adds insights on SNA's role before consultations (theme 1), patient-centred topics (theme 4), and parental preference for multimodal SNA (theme 5).

The 15 SNA communication recommendations from [35] realist review align strongly with our findings [35].

In their 2022 modified Grounded Theory study with UK parents and health professionals, Neill et al. identified 'navigating uncertain illness trajectories for young children with serious infectious illness' as a core factor influencing hospital admission timing for children under five [16]. They also highlighted the difficulty both parents and professionals face in recognising signs of serious illness in young children, which is supported by other research [36] and aligns with our themes 1 and 2. Additionally, they noted parents often feel powerless when their expertise is disregarded or feel socially constrained from seeking help due to perceived past criticism from professionals. This is echoed in an earlier study of theirs [19], van de Maat et al. (A&E setting) [37], and Cabral et al. on consultation decisions antibiotic prescribing [5]. These findings reinforce theme 4.

The UK-based ASK SNIFF co-created a digital prototype SNA app to help parents manage acute childhood illness in under-fives [15]. It is now being implemented and evaluated for its impact on parental empowerment and care outcomes – an emerging research area with little evidence [38]. A similar approach is needed in Belgium.

Reflexivity

The researchers had no prior relationship with the participants. RB, JYV, DB, SH, and ADS are practising GPs whose expertise in antibiotic prescribing provided valuable insights but may have introduced biases, such as suggestive questioning and confirmation bias. The moderator's background was disclosed to participants. Data coding and analysis were conducted by two GP-researcher pairs, potentially reinforcing shared biases.

Strengths and limitations

Strengths include the use of the FG format, which encourages discussion, generating rich data. During all FGs, we observed social dynamics supporting interactive discussion, which is the best way of gathering rich data in FGs [39]. Rau et al. state that FGs typically range in size from 5 to 10 participants [24]. We found that all our FGs successfully achieved the 'sharing and comparing' dimension, including those with smaller groups of 3 to 4 participants. However, in the FG with 7 participants (FG3), we occasionally observed certain individuals adopting a dominant role, while one or two others took on a more submissive position, often opting for'safe'responses that lacked conversational depth. We used an independently piloted interview guide and the moderator and observers reflected in group after each FG. Furthermore, two independent coders were involved, one of whom had not attended the FGs, so had no bias towards the participants. Efforts were made to recruit diverse participants, though socio-economic data were not formally collected.

Limitations include the absence of parents from rural (DEGURBA category 3) areas, because most of Flanders is classified as DEGURBA category 1 or 2 [23]. Second, qualitative research of this kind is inherently at risk of participation or non-response bias where participants disproportionately possess certain traits which affect the outcome, e.g., being a proponent or opponent of restricting antibiotic prescribing; having had a very good or a very bad experience with a sick child, antibiotics, or SNA; or being professionally active in research themselves. Maximum variation sampling techniques helped mitigate these biases. The initial two FGs lacked socio-economic diversity, but by intentionally recruiting different participant profiles for the following FGs, we attained diverse participants groups who raised similar topics and ideas. Finally, this study does not include data on participants'race/ethnicity, education level, income, occupation, marital status, religion, language, or citizenship/immigration status. Concerns about raising barriers to participation led to the decision not to collect this information. In retrospect, gathering these data would have enriched the analysis.

Implications for clinical practice and further research

Belgian parents expect various healthcare professionals to provide SNA, with reliable online resources playing a key role. In their 2024 environmental scan and user evaluation of mobile applications, Rathbone et al. highlighted several aspects of best practice when developing mobile health applications for the management of acute childhood illnesses for increasing perceived usefulness, perceived ease of use, perceived trustworthiness, perceived security. These aspects are: clarity of content, transparency to differentiate the apps from diagnostic tools, benefits and risks of virtual assistants, reputable endorsement and evidence-based content, and co-design with parents [17].

Cultural factors, such as Belgium's multilingualism and accessible healthcare, shape SNA preferences. While most parents expected immediate access to care for their acutely ill children, some saw less need for SNA due to the ease and affordability of physician consultations. The country's linguistic diversity likely contributes to the preference for a multimodal approach, ensuring information is accessible across different languages and formats. Varying health literacy levels further underscore the need for clear, culturally sensitive SNA. Trust in healthcare providers also plays a key role—Belgian GPs are seen as trusted advisors, and parents are more likely to follow SNA when it is tailored to their circumstances (theme 4) and delivered by a trusted source (theme 5).

Future research should explore SNA preferences across different countries and include children's perspectives. Validating findings with clinicians from diverse settings will enhance the relevance of SNA resources, ideally leading to a coproduced consensus and trials assessing clinical impact [11].

Conclusions

We identified five themes among Belgian parents' opinions, ideas, and expectations on SNA, replicating previous UK findings within the Belgian context. These insights provide a strong evidence base for developing an internationally recognised consensus statement on the content and form of SNA codeveloped by parents and experts from high-income countries.

Abbreviations

GP	General practitioner
COREQ	COnsolidated criteria for REporting Qualitative research
SNA	Safety netting advice
FG(s)	Focus group(s)
DEGURBA	Degree of urbanisation
IQR	Interquartile range
A&E	Accident and emergency

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12875-025-02803-3.

Additional file 1. Contains the COREQ checklist, the focus group interview guide and clinical case presentations, the characteristics of focus groups, a description of the coding tree, and the results of quantitative analyses of the participant check (box and whisker plots for each theme and their subthemes).

Acknowledgements

The authors wish to thank all parents that participated in the study; all parents that registered for the study but did not participate; Erinn D'hulster for methodological assistance; Tine De Burghgraeve for piloting the interview guide and acting as observer during one of the focus group interviews; interns (master's students biomedical sciences) Léa Guilmot, Ellen Smeulders, and Amber Bruffaerts for their assistance in organising, transcribing the focus group interviews and acting as observers during some of the focus group interviews; intern (master's student biomedical sciences) Kiyano Peeters for his help with writing up the study protocol and study documents; Dr Olivier Vantomme, Dr Evy Luyten, Dr Mieke Van Driessche, Dr Luc Present, Dr Laurent De Backer, Dr Heleen Deleu, GPs of WGC Rabot, and GPs of Huisartsenpraktijk Belgiëlaan for their help in recruiting parents; out-of-hours GP practices of Ghent University Hospital and of AZ Saint Lucas; Eline Costermans and Nina De Clippel and all colleagues of 'Huis van het Kind' and 'Kind en Gezin' Leuven, Heverlee, Diest, and Aarschot; staff of AGORA Learning Centre. Special thanks to Dr. Asscherickx and colleagues of General Hospital AZ Diest for their flexibility and the efficient practical support they provided in recruiting patients and organising a focus group interview at their hospital.

The authors acknowledge the assistance of OpenAI's ChatGPT–4.0 and Fiona Clark in improving the readability and language of this manuscript.

We thank Professors Sibyl Anthierens and Oliver van Hecke, external jury members for Ruben Burvenich's PhD, for their thorough review and feedback on this manuscript, which is included as part of his PhD thesis.

We would like to thank the KU Leuven for providing financial support for this study. JYV was supported by the National Institute for Health and Care Research (NIHR) Community Healthcare MedTech and In Vitro Diagnostics Co-operative at Oxford Health NHS Foundation Trust. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

Authors' Contributions

RB worked on the methodology, organised and either observed or moderated all focus group interviews, transcribed and coded the interviews, performed analysis, and wrote the manuscript. SH assisted in the conceptualisation of the study, observed two focus group interviews, supervised the project and reviewed the manuscript. DB coded the transcripts and reviewed the manuscript. KVR moderated the first focus group interview and reviewed the manuscript. ST reviewed the manuscript. JT reviewed the manuscript. ADS assisted in the conceptualisation of the study, supervised the study, and reviewed the manuscript. JYV supervised the project, performed analysis, arranged funding for the project, and reviewed the manuscript. All authors read and approved the final manuscript.

Funding

Participants of the focus group interviews received a €25 voucher from Colruyt Group, which was paid by KU Leuven.

No funding was provided for this study specifically. RB is funded by a KCE investigator-led trials programme "KCE- 181137 ARON" where KU Leuven acts as the sponsor and University Ghent is a cooperating academic centre. The financing is mediated entirely by KU Leuven. The financial sponsor played no role in the design, execution, analysis and interpretation of data, nor in the writing of the study or the decision to submit.

Data availability

The datasets supporting the conclusions of this article is included within the article and the Additional File.

Declarations

Ethics approval and consent to participate

This study was performed in accordance with the Declaration of Helsinki and approved by the ethical review board of the Research Ethics Committee of the UZ Leuven University Hospitals (reference number S66398).

Informed consent was obtained from all subjects and/or their legal guardian(s) signing and dating an informed consent form.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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Received: 18 September 2023 Accepted: 26 March 2025

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