

Research Article

Managing Nasal Congestion in Young Children; Qualitative Analysis of Parental Online Discussion

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Keywords

- Online discussion
- Nasal congestion
- Young children
- Parents
- Qualitative research
- Internet
- Asia Pacific Region

Abstract

Objective: Nasal congestion is a troublesome symptom in children, most often associated with upper respiratory tract infections or rhinitis (nonallergic or allergic), causing difficulties breathing, sleeping, and feeding, particularly in young children. Little is known about the challenges parents face when administering nasal treatments or using devices to reduce nasal secretions.

Design: This study was a thematic analysis of written exchanges between parents of young children discussing in online forums their experiences of dealing with nasal congestion.

Results: From the 66 forum discussion threads and 2 blog posts with 153 unique contributors we identified three key themes: 1) Children's emotional and physical responses to parental attempts to relieve nasal congestion, 2) Parental distress, and 3) Strategies for relieving nasal congestion parents shared with each other.

Conclusions: These descriptions of distress experienced by young children and the worry of their parents is a powerful reminder to health care professionals that procedures common and routine in health care may be challenging to parents. We suggest that the advice given to parents needs to go beyond prescribing or recommending a device to include advice on how to use these products, with tips on how to hold the child, distraction techniques and how to allay distress in the infant or toddler. Forewarned of the potential challenges and equipped with coping strategies, parents can alleviate their own and their child's distress when dealing with nasal congestion.

INTRODUCTION

Nasal congestion is a common symptom in children, most often associated with upper respiratory tract infections and rhinitis (nonallergic or allergic [1]. It is troublesome, causing difficulties breathing, sleeping and feeding, particularly in babies who are obligate nasal breathers [2]. There are many non-pharmacological treatments and medical devices readily available, including nasal aspirators, but anecdotally parents often find these ineffective or difficult to use. Surprisingly, little research has focussed on the challenges parents face when their baby or toddler has a stuffy nose or is congested. Online parenting discussion forums are a frequent sources for information about children's health; market-research done by Yahoo! found that 86% of new parents relied on the internet for information and >50% found that the internet has helped[3]. Using online discussion sites as a data source for research is an emerging technique [4,] which provides data readily. This study explores the challenges parents encounter when dealing with nasal congestion in their young children by analysing what

parents in Southeast Asia write about their experiences in online discussion forums.

METHODS**Data collection**

Using the Google search engine we identified websites in Southeast Asia where parents discussed the care of their babies and young children. Fora were defined as originating from the region if indicated by: region or country in the name (e.g., asianparent.com); country specific domain extension (e.g. .au for Australia); or use of colloquial terms (e.g., Kiasuparents.com where 'kiasu' in Singlish means fear of losing out). Each forum or blog was searched using the keywords "blocked nose", "how to give nasal drops" "nasal spray" "difficulties", "struggles" , "baby", "toddler". Threads were downloaded, and each post identified with three descriptors 1) forum number, 2) sequence of discussion post in thread, 3) initials of originator, e.g., "F02, 5, d" represents the 5th message from forum 2, contributed by parent with pseudonym "dreamz".

Data analysis

A systematic and inductive approach was used to generate themes from the textual data [5]. Two female researchers (HJW (novice) and HS (experienced)) repeatedly read the data and generated subthemes and themes which they shared with the third researcher (CJ) for checking, and comparison with the original data; any disagreements were discussed to reach consensus.

Ethical considerations

The British Psychological Society guidelines on internet mediated research[6], recommend using only openly accessible public web blogs and online forums. To ensure anonymity and confidentiality, website addresses were not presented. All quotes illustrating themes were returned to Google, and if their origin

was apparent they were paraphrased to ensure anonymity.

Patient and Public Involvement

Patients were not involved in the design of this study

RESULTS

We found 153 relevant public discussion posts across 66 discussion forums and 2 blog posts (Table 1). Three key themes were identified 1) Children's emotional and physical responses to parental attempts to relieve nasal congestion, 2) Parental distress and 3) Strategies for relieving nasal congestion parents shared with others.

Children's emotional and physical responses

Negative reactions: The descriptions of children's negative

Table 1: Data Extraction Summary.

Online discussion forums (F) or Blogs (B)	Number of forum or blog posts relevant to paper	No. of unique names identified	Range of dates of posts	Extraction date
F1	87	51	12-06-2005 to 15-09-2011	29-12-2018
F2	19	8	16-03-2011 to 17-03-2011	31-12-2018
F3 ¹	-	-	-	31-12-2018
F4 ¹	-	-	-	31-12-2018
F5	4	4	15-06-2006 to 22-06-2006	29-12-2018
F6	6	4	03-12-2012 to 04-12-2012	29-12-2018
F7	10	8	21-06-2018 to 22-06-2018	29-12-2018
F8	11	9	04-04-2012 to 10-05-2012	29-12-2018
F9	18	8	30-07-2018 to 30-07-2018	29-12-2018
F10	15	10	27-08-2016 to 31-08-2016	29-12-2018
F11	7	7	12-01-2018 to 12-01-2018	29-12-2018
F12	15	7	03-06-2018 to 17-06-2018	29-12-2018
F13	15	7	21-07-2016 to 27-07-2016	29-12-2018
F14	11	11	03-06-2016 to 06-06-2016	30-12-2018
F15	4	3	22-08-2017 to 23-08-2017	30-12-2018
F16	14	9	11-07-2015 to 12-07-2015	30-12-2018
F17	8	6	26-04-2014 to 26-04-2014	30-12-2018
F18	13	8	23-11-2005 to 23-11-2005	31-12-2018
F19	4	4	05-08-2009 to 06-08-2009	31-12-2018
F20	3	2	27-04-2011 to 28-04-2011	01-01-2019
F21	16	7	23-03-2007 to 23-03-2007	01-01-2019
F22 ¹	-	-	-	01-01-2019
F23	6	5	04-10-2017 to 09-10-2017	30-12-2018
F24	16	12	28-09-2016 to 03-10-2016	30-12-2018
F25	10	9	08-10-2016 to 09-10-2016	30-12-2018
F26	15	14	09-07-2015 to 12-07-2015	30-12-2018
F27	9	7	13-07-2016 to 14-07-2016	30-12-2018
F28	10	8	22-03-2014 to 23-03-2014	30-12-2018
F29	24	15	27-06-2017 to 29-06-2017	30-12-2018
F30	17	11	06-04-2016 to 08-04-2016	30-12-2018
F31	14	10	24-06-2014 to 29-06-2014	30-12-2018

F32	7	7	14-03-2017 to 14-03-2017	30-12-2018
F33	2	2	2 years ago	30-12-2018
F34 ¹	-	-	-	01-01-2019
F35	7	6	17-07-2009 to 19-07-2009	30-12-2018
F36 ¹	-	-	-	01-01-2019
F37	3	3	15-03-2012 to 15-03-2012	01-01-2019
F38	17	8	26-02-2009 to 27-02-2009	30-12-2018
F39	7	7	04-07-2017 to 05-07-2017	30-12-2018
F40	2	2	2 years ago	30-12-2018
F41	2	2	1 year ago	30-12-2018
F42	65	34	16-07-2009 To 25-12-2011	30-12-2018
F43 ¹	-	-	-	01-01-2019
F44	6	5	11 years ago	30-12-2018
F45	5	3	30-10-2016 to 30-10-2016	30-12-2018
F46	11	11	16-07-2016 to 17-07-2016	30-12-2018
F47	10	8	26-10-2016 to 27-10-2016	30-12-2018
F48	3	3	20-02-2017 to 20-02-2017	30-12-2018
F49	6	6	08-04-2017 to 08-04-2017	30-12-2018
F50	7	7	26-08-2015 to 26-08-2015	30-12-2018
F51	9	6	13-06-2017 to 14-06-2017	30-12-2018
F52	8	8	05-04-2017 to 06-04-2017	30-12-2018
F53	7	5	14-05-2015 TO 14-05-2015	30-12-2018
F54	2	2	2 years ago	30-12-2018
F55	8	5	15-05-2018 to 16-05-2008	01-01-2019
F56	7	7	18-06-2017 to 18-06-2017	30-12-2018
F57	59	26	26-07-2010 to 24-10-2014	30-12-2018
F58	8	6	30-08-2018 to 01-09-2018	30-12-2018
F59	4	4	01-08-2017 to 02-08-2017	30-12-2018
F60	9	9	8 years ago	30-12-2018
F61 ¹	-	-	-	01-01-2019
F62	21	13	31-03-2009 to 31-03-2009	01-01-2019
F63	18	13	14-09-2011 to 15-09-2011	01-01-2019
F64	9	7	08-06-2017 to 09-06-2017	31-12-2018
F65	21	19	20-03-2009 to 19-04-2011	31-12-2018
F66	3	3	04-09-2010 to 04-09-2010	01-01-2019
B1	-	-	04-07-2017	01-01-2019
B2	-	-	27-02-2017	01-01-2019
Forum was closed in November 2020				

responses to interventions to relieve their nasal congestion were plentiful. The extent of the child’s ‘hate’, ‘dislike’ or ‘fear’ of procedures was very apparent, e.g. “protests loudly”, “screams blue murder”, “screams the house down”, and often verbal objections were accompanied with physical resistance.

“I have difficulties sucking from my girl’s nose too... she will scream n shout n kick me...” (F2,44,J)

“The thing is he would not let you suction his nose, [neither] wipe his running nose. It’s been a hassle for both of us. He will either fight me or cry when I try to do so.” (F13,1,S)

Sometimes parents recalled similar experiences previously with an older sibling.

“He screams bloody murder, my dd [darling daughter] did the same” (F53,3,J)

Occasionally children displayed a conditioned response, for example just seeing a bottle of saline drops or having their face touched invoked a negative reaction.

“She just keeps moving her head side to side, even when I only touch her face, ha poor bubba, I have her tormented!” (F24,5,P)

Prolonged reactions: Some negative responses were sustained after the nasal stuffiness had resolved, one mother described how when dealing with nasal congestion in a younger child, the older sibling still runs away.

"I have Snotty [battery operated nasal aspirator] too...I bought it for my first daughter- she is three years old now and she runs away from me like a mad chook whenever she sees it, or hears it" (F17,6,Z)

Occasionally the child's negative responses stimulated spontaneous nasal clearance *"DD [Darling Daughter] hated the saline drops so much she started to scream and snuffle and a huge plug of snot flew out" (F3,7,T)*

Parental distress

Negative emotions: Distress associated with nasal medication and decongestion techniques were not confined to the child, parents also described their own negative emotions. They described their fear, *"I'm scared of the sucker thing too" and shared their frustrations, describing failed activities.*

"My bb had some dried wet mucus in her nose, but we can't seem to get it out. Tried to use wetted and twisted cotton wool." (F37,1,M)

Fear of harming rather than helping: Some parents were cautious when intervening lest they harmed rather than helped their child.

"I'm really bad with the aspirator, terrified to give it a good suck" (F9,2,B)

The size of the device and relative to the child's size exacerbated their reluctance to intervene, *"Those suction things are hard to use when they are little" (F13,10,K)*, but practicing on themselves sometimes allayed concerns, *"I also had the same concern last time - choking. After trying it on myself to give myself peace of mind ... I realised it's actually ok" (F1,21,O)*

Parental unfamiliarity with interventions: Parents recognised that the apparent lack of effectiveness of a medication, technique, or device to clear nasal congestion resulted from their own ignorance or inappropriate techniques.

"I always assumed that the bulb aspirator that came with the spray was pointless, until [doctor] told us we have to actually stick the aspirator up the nostril and close the other [nostril] before sucking out" (F32,5,J)

Strategies for relieving nasal congestion shared between parents

Topical strategies: Posts often started by asking for advice on how to administer nasal medications or how to relieve congestion, prompting others to express empathy, and share techniques that had helped them; one tip frequently shared tip was closing the nostrils *"I've been using the bulb sucker for quite some time, if I gently pinch his nose closed...it works a lot better." (F6,4,I)*

Parent also spoke about appropriate positioning and different formulations.

"Lay [young child] on their back and put the tip of the saline

spray bottle just inside one nostril and squeeze one or two drops into nose... can control how much goes in...and less likely to cause baby to overreact" (F33,2,YL)

"I also bought saline spray instead of drops because easier to administer" (F15,4,N-4)

When describing drops, solutions or sprays, caution was expressed about 'medicated preparations' and 'decongestants'; *"If you get either the nasal sprays or droppers, just make sure it's only normal saline.... the medicated ones can make baby's delicate nasal passages swollen, red & sore" (F60,9,M)* One parent shared how they needed surgery themselves after prolonged decongestant use.

Some parents described using 'play' or 'distraction' to increase the child's cooperation.

"He has let me...squirt up each nostril so far, we have made a game of it ...it has helped" (F36,3,S)

"I have to be quick, and distract him with a toy or something... best if I'm holding him, or if he's sitting in his highchair." (F22,2,S)

Others delayed intervention until the child was asleep, *"I spray my bubs nose when he has gone to sleep, doesn't even notice I'm spraying his nose. After a while I use a nasal syringe to extract the mucus." (F24,2,RB)*

Some parents described traditional approaches, e.g., Chinese medicines and tapping:

"A monthly visit to the Chinese physician to get herbs to regulate his nose. We also tap his nose bridge with warm towel. That helps control the mucusand he sleeps better." (F42,3,H)

Environmental strategies: Environmental adjustments, such as **increasing** a humidifier or creating a steamy environment, improved air circulation, or going to a swimming pool.

"A vaporizer may help. But if you don't have one, boil your kettle without the lid on/ or put a pot of water on the stove to boil - both of which may help temporarily." (F26,2,K)

The use of breast milk in the baby's nose was recommended to soften the mucus, it was characterised as a 'quick' remedy, and often was ranked superior to more technical approaches, *"Spray some breast milk in his nose. Much better than fess nasal spray because it is anti-bacterialI hope your little one gets better soon" (F25,3,M)*

Restraint: Some parents described using force to restrain their child, enabling them to administer medication or use a device.

"I have to hold my LO [loved one] almost like a head lock ... sounds bad, but it doesn't hurt him, I just hold him down." (F24,10,ta)

Parent's desire to be compliant with medical advice and to help their child was very powerful, but occasionally the child's distress dominated, and they surrendered.

"I'm probably going to sound like a really lazy mum here, but none of my children have liked getting their noses sucked or sprayed, it's a wrestling match, pin down, hold head kind-of-job,

which usually needed two people, so I gave up & would only insist on it if it was really bad" (F53,2,S)

Safety: The advice shared between parents was generally consistent with that found on websites developed by healthcare professionals. If recommending the use of medicated rubs, parents discussed putting it a distance from the nose, for example, "rubbing vicks vapour on her feet and covering it with socks". Elevating the head of the infant's bed is not recommended by professionals because of an increased risk of Sudden Infant Death Syndrome (SIDS), but was proposed by parents. One parent, aware her advice contradicted recommendations, described mitigating circumstances for its use:

"...for my bubs I elevate the mattress (this goes against Sids [sic] so only do it if comfortable) -we have a video monitor, breathing pads, and I'm a very light sleeper so I'm comfortable doing this" (F39,2,K)

DISCUSSION

Summary

This unique overview of what parents share about their young children's nasal congestion on internet discussion sites highlights the distress experienced by the child and the parents. Parents ask for advice on how to relieve nasal congestion, how to administer nasal medications and saline solutions, and how to use devices for extracting nasal secretions. In response, other parents expressed empathy, sharing tips from their personal experiences of caring for a child with a blocked nose. They described helpful medications, devices, environmental interventions, as well as ways to restrain the child and encourage cooperation. The advice offered was generally safe and consistent with that available on websites written by health professionals. Parents were aware of the potential danger of medicated rubs in infants [7], and advised appropriately, but the advice on elevation of the head of the child's bed conflicted with recommendations to reduce SIDS.

- Strengths and limitations This online search quickly identified rich data about a sensitive and little explored parental challenge, the management of nasal congestion in young children. By using non-reactive [6], or naturally occurring [8], data our subjects were unaware of the researcher. The threads describing parental fears and ignorance illustrates the potential advantage of this method, our subjects did not perceive any need to respond in a socially desirable manner [9].
- Text presentation was sometimes informal, with errors of literacy, punctuation, and spelling, however the meaning was always clear. Without the need for interviews or transcription, this method of data collection is fast and cheap.
- However, a limitation is the unavailability of participants' demographics and no opportunity to explore further the situations described are limitations.
- A review of online discussions from over a decade ago described the typical online parent as white, middle class,

first time mother, under 35 [9]. Internet access has since expanded, but this method may still exclude some. In contrast, it facilitates participation of groups traditionally excluded from research (e.g., those with restricted mobility, informal carers or residents of rural settings).

- Unlike verbal interactions, online forums enable people to respond at their convenience; they do not have to assert their wish to speak, encouraging contributions from more reserved participants [10].

Themes in relation to previous findings

Children's fears or negative attitudes towards medications is widely recognised and its impact on adherence and suboptimal treatment with oral medications has been written about since the 1960's [11], but far less is known about response to nasal medications and devices. The research on nasal medications tends to focus chronic conditions (e.g., persistent rhinitis) managed in specialist clinics. In Singaporean ENT outpatients almost a quarter (24.7%) of parents asked about the frequency of topical nasal medication refusal reported non-compliance, especially in children <6 years old [12]. In contrast, an American study of parents whose children were prescribed nasal saline irrigation reported tolerance of the treatment, irrespective of age [13]. However, this observation is misleading as it excludes the views of those unable to master irrigation after instruction or who were uncompliant, thus overestimating the tolerance reported.

Clinical implications

Using nasal medications and nasal aspirators can generate significant child resistance and parent-child conflict, not dissimilar to what has been recognized for many years when giving oral medications to young children [14]. Parents described how immobilising their child to achieve compliance challenges their role as guardian and caregiver. In paediatric clinical practice the use of restraint (also referred to as clinical [15], therapeutic [16], or supportive [17], holding) is commonly used with pre-school children, but it is known to generate undesirable psychological sequelae, including fear, anger, confusion, and emotional stress, both immediately and longer term [18,19]. Advising parents how to deal with their young child's reticence to have their nasal discharge cleared needs to be addressed early as there may be difficulty changing the child's response once an uncooperative pattern of behaviour has developed. To minimise these undesirable consequences, healthcare professionals need to be proactive, sharing techniques that minimise distress and maximise compliance when recommending medications and devices. Another avenue for exploration is greater involvement of parents in the development and design of devices, to ensure they are easy to use. There is a natural tendency when people fail to succeed with a product to blame themselves, but this has been challenged by Don Norman, a cognitive scientist, who proposed that when people have difficulty mastering unfamiliar technology the fault lies not with the user but with the designer [20]. When devices are used only occasionally, as is the case for clearing nasal congestion, the design needs to be intuitive, because however well learnt, it is rarely rehearsed.

CONCLUSION

Analysis of online discussion highlights how some parents struggle to clear their young child's nasal congestion and seek advice from other parents. In many instances the distress described appears to be significant for both the child and the parent. Documenting these difficult scenarios can act as a reminder to health care professionals that any recommendation to relieve a child's nasal stuffiness with nasal medications or a device needs to be accompanied with clear explanations of how to employ their recommendation. If parents are forewarned of the potential difficulties encountered, given tips on administration, and briefed about coping strategies should the child resist, more parents will be informed and confident when reducing nasal congestion.

WHAT IS ALREADY KNOWN ON THIS TOPIC

-Nasal congestion is a troublesome symptom in young children, most often associated with upper respiratory tract infections or rhinitis, causing difficulties breathing, sleeping, and feeding.

-There is little research on the challenges parents face when administering nasal treatments or using devices to reduce nasal secretions for their baby or toddler.

WHAT THIS STUDY ADDS

-Parental online discussion highlights how some parents struggle to clear their young

child's nasal congestion and seek advice from other parents.

-The distress experienced by children and parents is a powerful reminder to health care professionals that common clinical procedures may be challenging to parents.

- Managing nasal congestion needs HCPs to go beyond prescribing and to educate how to administer treatment and to cope with a child's distress.

-Forewarning parents of the challenges of managing nasal congestion, and sharing coping strategies could boost confidence and minimize short- and long-term sequelae

AUTHORSHIP

All authors (HJW, CCJ and HES) made substantial contributions to the conception and design of the study. HJW collected the data and all authors contributed to the analysis and interpretation of the data. HJW drafted the first manuscript, and all authors were involved in subsequent drafts and revisions, contributing critically and intellectually. All authors have approved the final submission.

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DATA SHARING

Data can be shared, in a format that is modified to protect the identification of the source and the person who wrote it.

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