

University of Groningen

A network of exchange

Luchtenberg, Malou

DOI:
[10.33612/diss.151468388](https://doi.org/10.33612/diss.151468388)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2021

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):
Luchtenberg, M. (2021). *A network of exchange: Towards the empowerment of children in medical research*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.
<https://doi.org/10.33612/diss.151468388>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Chapter 6

Discussion and Conclusion

Discussion

“I think it was really good because my parents let me decide, they didn’t see it as their decision. They realized that I was mature enough and it was my life I was playing with and that I should be able to make that decision. I mean, parents as well as doctors have to understand that when a child gets a serious illness, they’re not children anymore. They’re almost adults in the way they think and the way they do things.” (Mohini, 12 years old, diagnosed with acute lymphoblastic leukemia at the age of 9)

The introduction of this thesis started with this quote from Mohini, emphasizing the importance for parents and professionals to listen to children when they are asked to take part in medical research. According to the internationally recognized rights of children as stated in the UN Convention on the Rights of the Child (CRC)¹, children have the right to express their opinion on all matters that concern them. The CRC also states that children have the right to receive good health care and they have the right to be protected. In medical research practice these statements make it difficult to find a balance between enabling children to participate in research to increase knowledge about health care, while at the same time protecting them from potential harm that taking part in such research may involve. We addressed the need for more knowledge from children’s point of view on how to improve their participation in medical research. The following questions arose:

- Why do children participate in medical research?
- What value do children attach to the relationship with their doctors while taking part in medical research?
- How do children experience vulnerability while participating in medical research?
- Is it feasible to involve children as co-researchers in the analysis of qualitative research?

We aimed to answer these questions by exploring children’s lived experiences in both the United Kingdom (UK) and the Netherlands. To strengthen our analysis of the Dutch interviews we involved children from the general public. In the following paragraphs, we present our main findings against the backdrop of existing literature. Even though other researchers have previously studied similar aspects in pediatric research, the strength of this thesis lies in its broad perspective achieved by piecing together all the existing evidence. We first

discuss children's experiences from their perspective as research participants, and subsequently, from their perspective as co-researchers. We point out implications for clinical research practice and reflect on the strengths and limitations of our methodological approach. Lastly, we offer some recommendations for successful co-researching with children, we present possible future projects and conclude with some final remarks and a personal reflection in the appendix.

Children as research participants

Children are considered a vulnerable group because of their not yet fully developed autonomy. Consequently, they are highly protected by law. This may lead to overprotecting some children and to excluding them unnecessarily from medical research, while others might be underprotected. In their 2016 guidelines, the Council for International Organizations of Medical Sciences (CIOMS) suggests that children's vulnerability should be viewed in a more individual manner and that the potential differences between children and the situations in which they find themselves should be recognized.² This view is based on Luna's layered concept of vulnerability.³ Understanding what children themselves consider important while participating in research could help to provide them with sufficient protection while at the same time enabling them to participate in the fullest possible way. On looking back, children considered the balance between the burden of participating in research on the one hand and how they benefit from participating on the other hand as most important. They expressed a strong wish that by taking part in research they would be helping others in the future. Ultimately, they wanted their participation to result in better treatment for other children and, for parents, they wanted better understanding of their children's diseases. Some felt they owed something to society or wanted to give their doctors something in return. In 2015, we introduced the concept 'network of exchange' to describe children's motivations to help others who supported them, directly or indirectly.⁴ Interestingly, this publication sparked off a debate among several researchers in the *American Journal of Bioethics*. Questions were raised about the notion of regarding children as 'active social agents' emphasizing the need to enable them to participate as opposed to focusing on protecting them as if they were 'vulnerable subjects', about the justification of including social benefits in the informed consent procedure, and about children's wish to give something to their doctors in return and how this might influence a voluntary decision.^{5,6,15,7-14} These matters are explored in more detail in the following paragraphs.

To find a balance between burden and benefits in research, children focused on several aspects that could aid their decision-making about participation as well as their experiences while taking part. These included the type of interventions involved or the timing of procedures. The extent to which these aspects were perceived as burdensome varied between individuals and sometimes changed over time as children's experiences increased. This is coherent with the findings of Barned and colleagues.¹⁶ Tailored information and support from parents, health professionals, and peers played a role in facilitating children's decision-making. Disease or previous research experiences also helped children's decision-making, whereas negative or no previous experiences made them rely more on parental support and they needed more information to come to a decision. All these aspects contributed towards children's knowledge, capability, and confidence in making decisions about taking part in research and while participating. Empowerment¹⁷ seemed to lower their sense of vulnerability. We used the layered concept of vulnerability^{18,19} to help formulate strategies to minimize vulnerability and maximize empowerment based on children's individual needs and wishes. This may help researchers and research ethics committees (RECs) when developing or reviewing research proposals. Our main recommendations relate to information, support from others, and involvement of children. Children's involvement in research is discussed under the heading 'Children as co-researchers'. We first elaborate on children's wish to help others by taking part in research as this overlaps with the recommendations.

Helping others

Understanding why children would want to participate in medical research could help researchers to tailor recruitment and informed consent procedures to suit children's needs and wishes. Our interviewees felt empowered if, by participating in medical research, they were given the opportunity to help others, to have fun, and to learn about themselves or about their medical condition. Tromp and colleagues reviewed qualitative and quantitative studies on what motivates children and their parents to participate in pharmacological research. Among other reasons, they found that both children and parents considered helping others and contributing to science as important. They called for more data on underrepresented groups such as healthy children and chronically ill children with a special focus on factors that influence decision-making of the children themselves.²⁰ Our studies confirmed their findings on participants in a wide range of types of medical research in the UK and the Netherlands alike. We provided in-depth knowledge of both chronically ill and healthy children on their reasons for participating. Children reported the wish that by participating

they would be helping other children. Their contribution would mean improved treatment options for others, it would help them to gain a better understanding of their diseases, or it would help them to manage their diseases better. These 'other children' were represented by their peers who had just been diagnosed with the same disease or children from the public who might become patients in future. Children demonstrated that they could see beyond their own generation. Our interviewees acknowledged past contributions by others to their health care and, in turn, they wanted to give something to future generations. We referred to this as 'intergenerational solidarity'. Whereas intergenerational solidarity often refers to actions within generations of families (microsocial level) or within certain age groups in society (macrosocial level),²¹ children's reported solidarity reaches beyond these two levels to include future generations. In response to our publication,⁴ Staphorst and Van de Vathorst hypothesized that our concept of the 'network of exchange' concerns sick children in particular. They referred to their finding that helping others was mostly reported by children suffering a chronic disease and much less by healthy children in non-therapeutic research.^{8,22} We found that the desire to help others was indeed mentioned more explicitly by children who had experienced being a patient themselves, while healthy children also reported other motivations such as being interested in research or earning some pocket money. According to our participants this might be because healthy volunteers' contribution to the welfare of others was less apparent when they made the decision to participate. Healthy volunteers' wish to help others seemed to become stronger during and after participation, when they had experienced the value for others as well as the personal gain for themselves. They reported that they had difficulty finding out about research opportunities in the first place because they had not yet been in touch with a hospital or doctor. To improve the recruitment of children from the general public, our interviewees expressed the importance of publicly sharing positive experiences to counteract the oft-heard negative side of research participation. They said it would help to emphasize the contribution to the welfare of others while at the same time stressing that it is interesting and a fun adventure for themselves. Children also mentioned building a website where information about past and future research could be shared. Staphorst and colleagues passed on similar advice to researchers to maximize non-medical benefits when designing studies.⁸ We argued that their suggestion to make it an 'interactive game' should be approached with some caution. Interaction is an important aspect in providing information, but research participation should not be perceived as 'just a game'.²³ Staphorst and colleagues also suggested teaching children about science, thereby increasing support for research among children from the general public.²² This is consistent with an

important aspect of the impact on young co-researchers from the general public who were involved in one of our studies. We discuss this in more detail under 'Children as co-researchers'.

Children's wish to help others was also related to owing society or wanting to help science. An interesting finding of Barned and colleagues was that one participant with a chronic disease feels 'a sense of obligation to participate in research because he supported the underlying goal of research' and, even if it were to involve an uncomfortable intervention, the participant hypothesized that he would not withdraw.^{16,p25} We wonder if this should indeed be interpreted as a sense of obligation. Or could it be that some young people are prepared to carry the burden because to them the benefit of helping others by helping science outweighs that burden. The importance of such benefits of taking part in research, other than direct health benefits as opposed to the risks and burden of participation, is discussed in more detail under 'Information'.

Some of our interviewees stated that they wanted to give their doctors 'something in return'. Wright and colleagues commented that they emphasize the value of trust in patient-professional relationships that might underlie such decisions. Nevertheless, they also expressed the need to be aware of potentially involuntary decisions on the part of children and their parents. Based on the report on ethical issues in relation to children and clinical research published by the Nuffield Council on Bioethics,²⁴ Wright and colleagues argued that professionals should show that they are worthy of trust' and called for open and honest relationships.¹¹ The child-doctor relationship is further discussed under 'Support from others'.

Information

Our recommendations regarding the topic information relate to the form or language used to present information to children as well as the content of the information and how it is presented to them. Information for children should be adjusted to their level of understanding and they should be involved in decision-making as much as possible.²⁵ It seems obvious that information is focused on the child's level of knowledge and development. Nevertheless, the review by Grootens and colleagues showed that there is a readability gap between information leaflets and children's actual reading level.²⁶ Our interviewees also indicated that sometimes written or oral information is unclear or that researchers talk to the parents more than to them. Both these aspects confirm findings from the study by Unguru and colleagues in which most children reported they did not understand

the language their doctors used. The most frequent suggestion made by these children was that doctors speak to them and not only to their parents.²⁷

Our participants mentioned the importance of tailoring the information to suit the individual child by, for example, taking into consideration their sex and experience. They expressed that knowing what would happen during a study was most important in considering to either take part in research, or not to. Not knowing what to expect could make children anxious.^{28,29} Hein and colleagues found that this makes it more likely for children to decide not to take part. Children reported that they wanted to be better informed and more involved in the process of giving informed consent. The children in our study wanted information to be directed to what they considered to be important, not just the risks and burdens along with other legally required information, but also the benefits. These benefits, that were perceived both during and after participation, related not only to health benefits but also to improvements in their personal lives, including learning about their disease, having fun, and improving their self-esteem.⁴ Similar benefits are expressed by healthy children and ill children in the study of Staphorst and colleagues.²² Barned and colleagues reported that some children find it ‘extremely rewarding and spoke about the positive feeling they receive from the overall experience’.^{16,p22} Spriggs opposed our recommendation to include such potential benefits in the information. Even though she agreed that positive experiences are desirable, she argued that they ‘*cannot be guaranteed and it is a happy coincidence when it occurs*’.^{9,p36} She stated that personal benefits and positive side effects, as distinct from health benefits, should not become an incentive or justification to enroll children in research.⁹ We argued that benefits or positive side effects and risks of harm or burden cannot be guaranteed. This may not be a reason to not be open about what children might experience. There is always a risk of coercive influences of which health professionals should be aware. Nevertheless, protecting children by presenting them with an incomplete picture of potential risks or benefits, would not give them a fair chance to arrive at a well-informed decision whether the benefits outweigh the burden.²³ RECs have an important role in assessing which benefits should be included in the information. In practice, some REC members reported difficulty in assessing how risks and burden are balanced in research.³⁰ Therefore, we concur with Navratil and colleagues and Carter who argued for youth representation on RECs to help review the balance between risks and benefits in study protocols.^{13,31}

Various initiatives for better ways of providing information for and communication with children have been suggested to foster informed decision-

making. These include the use of comics³², interactive media,^{33,34} or shorter information and informed consent or assent forms.³⁵ Although the results of these initiatives are often promising, evaluation of the strategies in real studies is lacking and some fail to test for true comprehension rather than recall of information.³⁶ It is considered unlikely to find an effective one-size-fits-all type of informed consent or assent form and impossible to replace a personal approach in which research team members are knowledgeable about and sensible to subtle distinctions among children involved in research.³⁵⁻³⁷ More personalized and dynamic approaches towards informed consent have been suggested to leave more space for relational aspects and children's developing capacity. By seeing informed consent not merely as a single moment but rather as an iterative process, the responsibility of the research team is in fact much broader than the legal requirement of informed consent implies.³⁸⁻⁴¹ Our studies showed that children wanted to be informed, supported and involved, not just in deciding whether to participate but also while actually participating in research. Especially those children who participated to help others wanted to know whether their help had been of value. Not all of them knew what the outcome was of the study they took part in, and they recommended that researchers inform them of the results. When children had a trusting relationship with the research team and a positive research experience, they felt more inclined to participate in future research. We therefore recommended regarding children's participation as an iterative process during which decision-making and interaction with the research team not only takes place during the informed consent process but throughout the entire research cycle. Focusing on this iterative process offers the possibility of improving recruitment and children's participation in research, as well as their potential future participation.

Support from others

Several individuals in the children's surroundings played an important role in helping them decide about participation in research and in supporting them while they participated. These were mainly adults, such as the health professionals and parents, but peers too, both friends and unknown children who had gone through similar experiences. Our interviewees reported that it could be helpful to have friends around for some distraction or to be in contact with peers who were going through the same process. One of the children's recommendations to improve their experiences was having website where they could contact each other and share experiences. A case in point is the UK Health Talk website (healthtalk.org). Similarly, Unguru and colleagues showed that three quarters of children involved in pediatric oncology research would have appreciated the opportunity

to speak to other children to help them understand what it was like to be enrolled in research.²⁷ In addition to a website, we suggested that more interaction among children could be realized through young people's advisory groups (YPAGs) or through a network of such groups.²³ We discuss the role of these groups and networks in more detail under 'Children as co-researchers'.

Parents and health professionals played an important supportive role in children's decision-making about research and how children experienced taking part in research. Unlike some studies,^{16,27,42} none of our interviewees reported feelings of obligation towards parents or professionals. Parents were supportive of their children in helping them understand the information, by involving them in decision-making, by reminding them of what was about to happen, or by simply being around when children underwent procedures. The role of parents depended on individual differences and on the role of health professionals. This is consistent with existing literature on parents' roles.⁴³ Our interviewees liked health professionals who involved them actively in the research procedures. This resulted in a sense of collaboration between them. The children also liked health professionals who made them feel at ease. They acknowledged the importance of their physicians even more. Sometimes the physicians only helped with recruitment, while in other instances they were part of the research team or they were consulted by the children even though they did not play a formal role in research. Children felt more comfortable if they were able to talk to someone they knew as opposed to a stranger. They trusted someone who is familiar with their situation, medically competent, supportive and caring, and for whom their safety comes first. The importance of a helpful and supportive adult environment, consisting of both parents and health professionals, was also suggested when involving very young children in the process of assent in research. Factors such as familiar relationships, sufficient time investment, and contextual aspects were important to children's exercise of agency.³⁷ Relationships with health professionals, familiarity with the hospital and procedures, age, and time were also factors that enhanced consultations in the general health setting. This was reported by 7 to 18-year-olds with acute and chronic diseases in a qualitative study by Coyne and colleagues.²⁹ Dekking and colleagues argued that dependent relationships of children and parents with their doctors not necessarily compromises a voluntary decision to take part in research, but in practice it might still be perceived this way.⁴⁴ In contrast to studies in which a few adolescents felt obliged to take part in research because of a dependent relationship with their doctors,^{27,42} none of our interviewees reported feeling obliged to take part because their own doctor was involved. On the contrary, it empowered

them to be able to help their doctors by participating in research. It made them reciprocating individuals rather than mere patients. A trusting relationship made our interviewees feel freer to ask questions and to deal with uncertainties such as being randomized in a trial. Coyne and colleagues also found that children felt '*they could ask questions freely and express their concerns*' when a trusting relationship was established between health professionals and chronically ill children.²⁹ Whereas in theory a dual role of the researcher-physician is considered problematic,⁴⁵ our studies imply that a dual role might help improve children's experiences, especially those of patients who had established a trusting relationship with their doctors. In healthy children, lack of such a relationship made them more cautious on first contact with a researcher. Consequently, they depended more on parental support when they were introduced to research. Lack of disease experience and unfamiliarity with health care and research were reported by Hein and colleagues as predictors for non-participation of pediatric patients who just been diagnosed.⁴⁶ The importance of trust in professionals for consenting to research was found in previous studies, although these focused mainly on parental consent.^{47,48}

Trust can be justified when it is linked to trustworthiness. In practice, evidence must be sought for doctors to be worthy of trust,⁴⁹ and trusting relationships are supported by governance systems that can be perceived as trustworthy.²⁴ A safeguard for the influence of trust to be acceptable is, for example, the filtering role of RECs before research opportunities are presented to potential participants.⁴⁸ Doctors and researchers are led by ethical guidelines, but these guidelines are not sufficient to make them trustworthy.⁵⁰ This asks for a great sense of responsibility and reflexivity on the part of the researchers to conduct their research in accordance with ethical values. Some children in our study provided evidence for this aspect by reporting that their doctors were honest, competent, and reliable - traits that make professionals trustworthy.⁴⁹ Interviewees with disease experience reported that they perceived both their doctors and the hospital in general as trustworthy because they were familiar to them. Healthy volunteer interviewees did not show outright distrust, but some were more cautious on first contact with professionals in hospitals or research institutes. This calls for better engagement of the public in building and maintaining trust in science and research. Making more information about research available to the general public, not only emphasizing what can go wrong but also sharing positive examples as was suggested by our interviewees, is therefore an important recommendation. A Dutch example is the *Kind en Onderzoek* [child and research] website, (<https://www.kindenonderzoek.nl/>) that was created by the research group *Kind en*

Onderzoek, the *Vereniging Samenwerkende Ouder- en Patiëntenorganisaties* (VSOP) [association of cooperating parent and patient organizations] and the *Stichting Kind & Ziekenhuis* [child and hospital foundation]. To further improve such initiatives, we believe it is important to invest in the interaction between and among children and professionals.

Implications for clinical research practice

We discussed children's needs and wishes regarding their participation in research. If we want to take children's voices seriously, we must support their developing autonomy. Therefore, we should not merely render them vulnerable, but we should also empower them and focus on adults' responsibilities to support them.⁵¹ Generally, the adults are children's parents as well as health professionals. Based on children's needs and wishes, the responsibilities of professionals extend beyond the requirements formulated by law, such as a single moment of informed consent. It also extends beyond a strict division between research and care. In fact, practice appears much more complex and this complexity asks for a personalized approach.

Information should be tailored to meet individual needs based on children's knowledge and previous experiences. Children should be updated about research outcomes to know how they contributed. They should be involved in decision-making about participation before, as well as during participation, to an extent with which they feel comfortable. In order for children to express their wishes and to ask questions, a trusting environment should be created in which children feel at ease and one in which they feel they are taken seriously. This asks for relationships based on familiarity and trust, one in which the research team should show trustworthiness. The combined doctor-researcher role might thus help to improve children's participation. Tailored information, involvement, and support can make children feel more inclined to participate in future research. We recommended regarding children's participation as an iterative process, in which decision-making and interaction with the research team not only takes place during the informed consent process but throughout the entire research cycle. One of our interviewees explained perfectly what is most important in research participation:

“Eh, lots of collaboration. And, explain clearly what you are going to do and so on. And yes, because we have really done so much together, all of us; with a team and all that. And that made it all very pleasant, you know. It became much more humane, so to speak. You weren't doing an investigation with numbers or something. You were just doing something together.” (Girl, 14 years old)

Public engagement should be a point of interest for the research team to ensure that children from the general public have an equal chance to participate in research as patients do.

Children as co-researchers

We explored children's experiences from their point of view as research participants to enable us to implement recommendations to improve their positions in research. Yet, to attune research to whom it specifically aims to benefit, children from the target group should actually be involved as co-researchers. Given their perspective, they might emphasize different aspects of research based on their experiences. We involved children in a qualitative analysis of our Dutch interviews to improve the reflexivity⁵² of our research team.

Challenges

Establishing patient and public involvement (PPI) in research is challenging. Several concerns were reported, such as a lack of time and funding, gatekeeping, or power imbalances. In addition, how and to what extent children should be trained and involved is open to debate.^{53–61} PPI can be organized through single events where children's input is asked, or researchers can start an ongoing collaboration by setting up a YPAG. These can be generic groups or groups that focus on specific health conditions.^{57,62–64} Several initiatives were set up to connect YPAGs and share information, such as GenerationR in the UK,⁶⁵ the European Young Persons' Advisory Group Network (eYPAGnet),^{63,66} and the International Children's Advisory Network (iCAN).^{67,68} In the Netherlands, multiple *Kinderadviesraden* [Children's Advisory Councils] were established. These councils are interconnected through the Dutch *Stichting Kind en Ziekenhuis*⁷⁰ [child and hospital foundation] and they advise hospitals on health care processes and think along with policy developments.⁶⁹ Unfortunately, often too much is asked of these groups, which makes gatekeeping by the facilitators insurmountable and not much time remains for research development involving children. We experienced this in our study. As a consequence, we involved children through single events. These were divided in two phases and took place at children's homes and at a local primary school. We faced many of the other reported challenges and consider them in more detail under 'Strengths and limitations of the methodological approach'. First, we discuss the impact of the collaboration with our young co-researchers, share our Nine C's for successful co-researching with children and point to implications for clinical research practice.

Impact

The impact of PPI does not depend solely on its added value to research, but also on knowledge and experience exchanged between the individuals involved. We found several learning exchanges between professional researchers and co-researchers. Although our qualitative study differed from clinical research in many ways, the impact on learning of those involved might be similar. We touched on the impact of involving children in terms of the added value to our research outcomes. A detailed assessment was beyond the scope of this thesis and will be one of our future projects.

The reported impact of involving young people in research includes increasing their confidence, gaining skills, being more independent, and career development.^{54,71} Our co-researchers, children from the general public, also reported that they had learned new skills and had gained knowledge on matters of health and illness, and research. Those who were involved during school hours welcomed the change of doing something different instead of their regular schoolwork. Healthy volunteers also reported that having fun and gaining knowledge were benefits of participating in research, just as having a day off from school was. These benefits were found both in the study by Staphorst and colleagues²² and in our own study. Some co-researchers said they liked helping others. Similar to what our research participants demonstrated, this was related to helping sick children, but also to helping research or, more specifically, the individual researchers. The co-researchers displayed a broader interest than merely fulfilling their role as co-researchers, because they also asked questions such as why the adult researchers did the research project and whether it was part of their university training. They valued and enjoyed helping the adult researchers with their research. Our co-researchers empathized with the children in the videos who shared their illnesses and research experiences which the co-researchers helped analyze. It made the co-researchers reflect on health and illness in their own lives and in the lives of relatives and friends. This showed that involving children from the general public enhances their engagement with both medical research and the clinical field.

The impact of PPI in terms of added value to research outcomes is difficult to measure because of the complexity of the involvement process. Measuring impact in a quantitative way is unlikely to be beneficial because potentially it may miss out important contextual influences specific to a certain research project. Besides, researchers do not know beforehand what new knowledge others will contribute, because they themselves do not have that knowledge.⁷² Best and colleagues⁷³ and

Locock and colleagues⁷⁴ found that on the whole the young people involved in their qualitative interview analyses identified similar themes to those identified by adults, but they pointed out some important nuances. Similarly, we found that children in our analysis placed more emphasis on concrete examples, such as the interviewees' recommendations on making research more pleasant, whereas adult researches had generalised them into one overarching theme. In so doing, the children brought us back to the importance of considering details. This finding seemed to be beneficial, not only for our results, but also shaped our own thoughts of how research might be translated into practice. This resonates with different ways of learning impact on researchers as described by Staley and colleagues. They found that researchers gain knowledge they would not otherwise have learned from textbooks, and they gain communication skills that could facilitate engagement of the general public.⁷⁵ Locock and colleagues reflected that the young people in their study taught them that a more creative and less process-driven approach is desirable for PPI in analysis of qualitative data.⁷⁴ The importance of a dynamic and flexible approach when involving young people was also reported in other studies.^{76,77} In our study we chose a creative approach towards presenting and analyzing the data. Children were asked to identify the main topics in video interviews and to summarise them on mind maps (a type of diagram for organizing information)⁷⁸, using different sizes of sticky notes and coloured pens. Our choice of presenting the data through videos rather than transcripts was aimed primarily at making the involvement process more feasible. Additionally, it made us realize that by using videos we perhaps presented the data in a more authentic way. In transcriptions, even verbatim, elements such as volume of voice and facial expressions are lost. Thus participants' experiences might be presented in a more abstract way than the original data.^{79,80} This left us with the question whether video data could be of added value to our own traditional way of analyzing transcripts to improve the rigor of analysis processes. It also made us wonder whether presenting the data on video was the reason why children tended to stick to more concrete themes, while adults analyzed data in a more abstract way. This difference between children and adults may be partly explained in relation to the cognitive development of children, who transform from concrete to abstract conceptualisation later in adolescence.^{81,82}

Network of exchange

In the previous paragraphs, we discussed children's experiences from their point of view as research participants and as co-researchers. Exploring children's experiences deepened our understanding of their needs and wishes. These can

be understood by means of the concept of a 'network of exchange'. We first introduced this network of exchange to explain children's wish to help others by participating in research because of their acknowledgement of efforts from children in the past, or the good care they received from parents or doctors. Our exploration of the child-doctor relationship, children's perception of their vulnerability, and the experiences of our collaboration with young co-researchers provided further insight into this network of exchange.

Children needed support from their parents, health professionals, and peers to improve their decision-making about research and their overall experiences while taking part in research. These individuals all interacted with each other to guarantee adequate support. A long-term child-physician relationship, for example, helped children to feel at ease, to ask questions about the research, and it sometimes led to a sense of mutuality. They wanted to show that they were not mere patients but reciprocating individuals, who wanted to give their doctors something in return and to help researchers to improve health care for children in the future. The knowledge children gained about their illness and their research experiences empowered them. They felt more confident and better prepared to make decisions regarding their participation. Sometimes, these experiences made them feel more inclined to participate in future research.

Children who were involved as co-researchers occupied a special place in the network of exchange. The co-researchers helped to give a voice to the interviewees and thus helped future patients. The co-researchers and adult researcher exchanged their knowledge and learned through interaction. For the co-researchers, it resulted in greater awareness of the need for pediatric research, they reflected on health, and illness in their own lives, and they learned new skills. The adult researchers became more aware of the needs and wishes of children, and it increased reflectivity on their own work. Involving children in research therefore has the power to bridge the gap between academia and society.

The interaction of all the individuals in children's networks resulted in an exchange of services that were beneficial for each individual. Moreover, it will contribute to improving health care for children in the future. Figure 1 provides an overview of this network of exchange. More focus on this network will empower children who participate in medical research

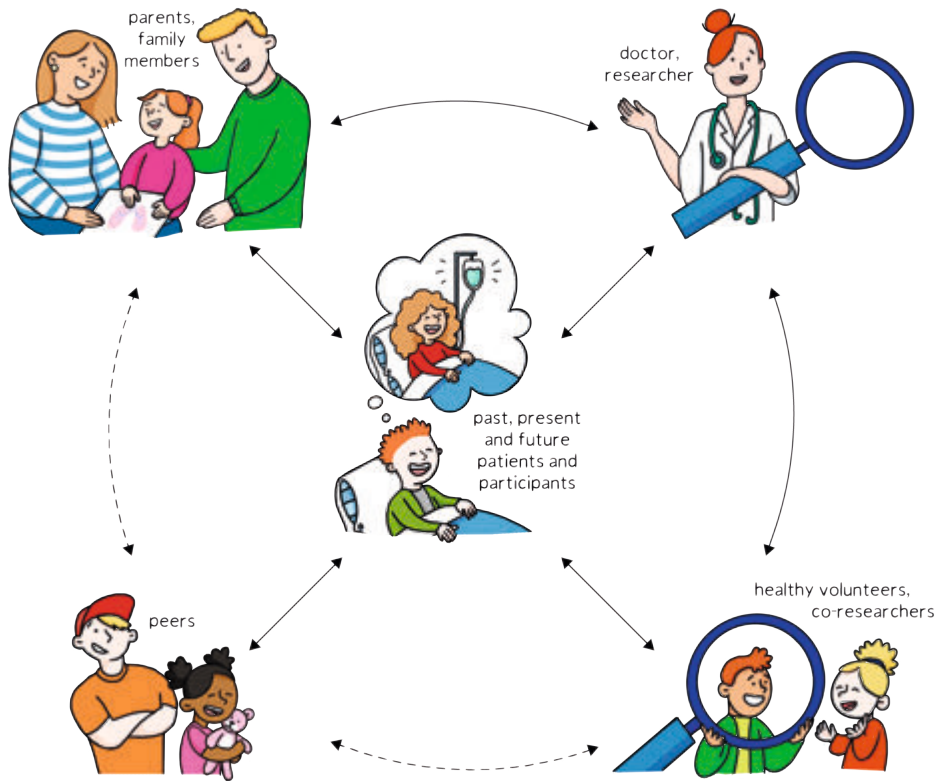


Figure 1. The network of exchange in pediatric research

Note. The arrows symbolize the exchange of services and learning between the individuals or group of individuals with children who participate in research. The relation that is displayed with a dotted line was based on our own hypothesis that co-researchers from the general public may be classmates or friends of patients. Their potential exchange lies in the possibility to inspire each other to participate in research as a healthy volunteer, or to help science as a co-researcher. Peers and parents of pediatric patients may support each other by helping their friend and child.

Strengths and limitations of the methodological approach

In this thesis we provide in-depth knowledge on how children experienced taking part in research. We conducted one-on-one, face-to-face interviews with children in their own homes (Chapters 2, 3, and 4). Interviewing children in a familiar environment helped them feel at ease during the interview. Children helped with installing the audio and video equipment and were given the lead to start, pause, and stop the audio tape. We gave children a voice not just by inviting them as participants, but also by involving them as co-researchers (Chapter 5). Moreover, the meetings with our co-researchers took place in surroundings that were familiar

to them. We let them collaborate with young adult researchers and a parent was present in the background during the one-on-one meetings. The children involved in the group meetings all knew each other from school. We believe that creating safe and familiar environments helped to decrease any potential feelings of power imbalances as described in literature.⁸³ This also resonates with literature reporting that face-to-face meetings are important to make them feel at ease and to establish relationships with co-researchers.^{76,77,84} Involving children as co-researchers improved the rigor of our analysis. Our study is also a valuable addition to the relatively scarce literature on children's involvement in research. Another strength is our multidisciplinary team of international collaborators with backgrounds in sociology and philosophy, complementing our own team with backgrounds in pediatrics and ethics. Lastly, we want to point out that our interviewees included both patient participants and healthy volunteers, who all took part in different types of medical research. Some had declined to participate in research or had withdrawn from research. We extended the amount of data by combining our Dutch dataset with the dataset obtained in the UK. This enabled us to dig deeper into children's experiences regarding their relationship with their doctors and the research team (Chapter 3) and children's views on vulnerability and empowerment (Chapter 4). Nevertheless, despite of the range of participants we recruited, some groups or characteristics were not represented in the maximum variation possible. Finding interviewees with experience as healthy volunteers or who had decided to decline or withdraw from research was difficult. We were also unable to find participants from different cultural backgrounds and areas such as a palliative setting or children from low-income countries. Especially for our study on children's vulnerability (Chapter 4), this might have led to additional insights. De Vries expressed the criticism that our secondary analysis on the UK data only (Chapter 2) did '*not go beyond tokenism*', referring to Hart's ladder of participation,⁸⁵ because we did not involve the interviewees in our interpretation. She mentioned the YPAG of the Medicines for Children Research Network (MCRN) in the UK as an initiative that is actively involved in designing studies and evaluating information and consent forms.¹⁰ This network, including individual young people, was actually represented on the advisory panel that steered the design of the interview schedule, data collection, and analysis, and as we pointed out previously,²³ members of the MCRN helped to recruit participants for the primary study performed in the UK,⁸⁶ Hart defined tokenism as '*instances in which children are apparently given a voice, but in fact have little or no choice about the subject or the style of communicating it, and little or no opportunity to formulate their own opinions*'.^{85,p9} Indeed, we did not perform our secondary analysis with the young people themselves. Nevertheless,

we argue that this should not be seen as true tokenism. The qualitative method with semi-structured interviews was used to explore children's experiences and to test hypotheses that were derived from other interviewees' opinions. Through this iterative process interviewees helped to voice each other. In addition, at the end of the interview, the children were asked to summarize their most important experiences, which prompted the identification of our themes. In this secondary analysis we considered it unfeasible to involve the young people from the UK because the analysis was carried out in the Netherlands. Involving Dutch children was unfeasible because of the language barrier. Lastly, we want to point to the often-used abbreviation PPI, which implies that involving patients and members of the general public is one and the same. There are several differences, however, between patients and members of the public.⁸⁷ In some projects, children are asked because they represented the points of view of child-members of the general public, while in other cases it might be more beneficial for research to investigate the perspective of pediatric patients. We recruited children from the general public in our research (Chapter 5). We hypothesized that involving patients in our research might increase the risk of their personal background influencing them in one direction or another. Yet, exactly such shared disease experiences could make these children more understanding of interviewees with the same health conditions. Another reason for our choice was that we considered it unrealistic to recruit patients with conditions that match the conditions of our interviewees within the available time frame. The benefit of collaborating with children from the general public was that we found out how PPI increased their awareness of the need for medical research and for us to realize how willing they were to contribute to science - all adding to the network of exchange.

The way forward

This thesis aims to provide insight into children's experiences and thus to improve their participation in medical research. We argued that children should be considered as co-researchers to tailor each study to suit the needs and wishes of those children whom it concerns. Fortunately, there is a growing recognition of the need to involve children in research, but the question how to accomplish this remains. The answer is not easy. Each study is unique. The reality is created through the interaction of everyone involved, all of whom contribute their own knowledge and experience. Because of this complexity, there is no one-size-fits-all tool for involving co-researchers. We developed the Nine C's to provide some guidance (Figure 2). The Nine C's should be seen as considerations that could help shape future research involving young co-researchers.



Figure 2. The Nine C's for successful co-researching with children

The Nine C's are based on feedback from our co-researchers, our own experiences, and the results of a workshop we held at the annual iCAN conference, June 2019, in which both children and adult professionals took part. Our local Children's Advisory Council also provided input. The children and young people involved were patients or members of the general public, some of whom were involved in patient advocacy and others in research. The adults participating in the iCAN workshop were facilitators of YPAGs and other professionals who have affinity with involvement of children in health care and research. Below we provide a more detailed explanation of the Nine C's:

Courage: Involving children in research is challenging, it takes courage and the right motivation is key. If you are not planning to incorporate children's feedback, then do not ask them. Be aware that it takes courage from children too. They might feel that they do not have the knowledge or experience, so make them feel safe and be patient, listen to them. Think carefully about who can help you to develop your research and at what stage of the research process. Find children who are motivated and eager to learn.

Clock: Take time to prepare meetings and make sure you have tailored information. Realize that children also invest their time, so do not waste it.

Cost: Make sure you have sufficient funding for the involvement process. The main costs involve funding research time. When carried out locally, travel expenses and material costs should be relatively low.

Collaboration: Create a win-win situation. Children will show you what it is like to live with a health condition, how to tailor research towards their needs, and they will also let you know when something does not work. In exchange, they learn about health care and research, develop leadership and other skills and they may get ideas about their future careers. If appropriate, consider shared authorship or co-presentation at a conference.

Creativity: Be creative and try different working forms. Do not expect children to work the same way as adults would. Meet face-to-face.

Chaos: Do not hold on too strictly to your organized research structure, some chaos might benefit the outcome of this collaboration. Interact with children and leave space for personal reflection on both sides.

Cookies: Provide cookies and other refreshments.

Compensation: Reimburse travel expenses, discuss compensation for children's time or provide them with volunteer hours (for school). Consider given them a voucher or small gift.

Celebration: Working with children is fun! Exchange passion and celebrate successful outcomes together. Keep in touch.

Many great initiatives have been set up to share knowledge on PPI. Providing an overview goes beyond the scope of this thesis, but we have added some suggestions for further reading in the appendix. We believe that it is only through collaboration that we might succeed in changing the future landscape of research and to turn PPI into the new standard. We hope to contribute to this objective by means of the following projects, some of which are being developed or already in progress:

1. *Assessing the two-phase approach for involving children and young people in a qualitative data analysis.* Currently, we are working on a follow-up study of the study presented in Chapter 5. We are collaborating with young people aged 16 to 18, who will be using this project for a school assignment. The proposed outcome is a shared publication and presentation at an international conference. We are also working on an assessment of the outcomes of the interview analyses from the perspectives of children, young people, and academic researchers. This follow-up study was facilitated by the UMCG Innovation Prize awarded to the author of this thesis at the end of 2019. It was a major recognition of the importance of this innovative field of research and an encouragement to further develop this approach.
2. *Setting up an advisory group with children and young people to work on shared research projects with academic researchers.* The aim of this group is to assist researchers who want to involve children in their research and to provide feedback on documents such as patient information leaflets. This project could be in the form of a collaboration between local schools and the university hospital to combine the expertise of patients and children from the general public and to increase public engagement in research. It would be interesting to collaborate with the local REC and, hopefully, we could join up with international networks such as eYPAGnet and iCAN to learn from each other and to strengthen children's voices in research globally.
3. *Assessing clinical research agendas involving children.* Before 2016, young people were involved in a mere 5% of all research agendas for clinical studies with chronic patients,⁸⁸ but since then some new initiatives have been reported.^{89,90} There is a lack of knowledge about how such initiatives could be translated to the development of new research and how this should be assessed. There is a need to set up a dialogue with children and other stakeholders, such as funding agencies and grant reviewers, on how initiatives could be implemented in the changing research structures.

Conclusion

With this thesis we aim to contribute to the participation of children in medical research by exploring their self-reported experiences. Based on children's needs and wishes, the responsibilities of professionals should move beyond the requirements formulated by law, such as a single moment of informed consent and a strict division between research and care, because practice appears to be much more complex. This complexity asks for a personalized approach that takes into account children's diseases and research experiences, information needs, and the relationship with the research team, parents, and peers. We recommend considering children's participation in research as an iterative process in which the relationships are fostered with the individuals they know. This should result in a better balance between providing protection and enabling participation. Tailored support shall increase children's knowledge, their capability, and confidence. It shall empower them to make decisions about taking part in research, decisions while participating, and it shall make them more inclined to consider taking part in future medical research. We introduced the concept of a 'network of exchange' to describe the needs and wishes reported by children and their interactions with their doctors, the research team, parents, and peers. Focusing on this 'network of exchange' shall empower children who participate in medical research, now and in the future.

We advocate the innovative notion of involving patients and children from the general public in medical research as co-researchers. We challenge clinical researchers to tailor each study towards children's personal needs and wishes, and to make research outcomes more relevant to them. Specific attention is required to increase awareness among children from the general public of the need for pediatric research. Involving and engaging children in research will decrease the gap between academia and society.

References

1. UN General Assembly, Convention on the Rights of the Child, 20 November 1989;1577 U.N.T.S.:3.
2. Council for International Organizations of Medical Sciences (CIOMS). International Ethical Guidelines for Health-related Research Involving Humans, Fourth Edition. Geneva. 2016.
3. Van Delden JJM, Van Der Graaf R. Revised CIOMS international ethical guidelines for health-related research involving humans. *JAMA - J Am Med Assoc.* 2017;317(2):135-136. doi:10.1001/jama.2016.18977
4. Luchtenberg M, Maeckelberghe E, Locock L, Powell L, Verhagen AAE. Young People's Experiences of Participation in Clinical Trials: Reasons for Taking Part. *Am J Bioeth.* 2015;15(11):3-13. doi:10.1080/15265161.2015.1088974
5. Anderson EE. Learning From Research Participants. *Am J Bioeth.* 2015;15(11):14-16. doi:10.1080/15265161.2015.1088982
6. Baines P. Let's Be Clear About Children and Young People. *Am J Bioeth.* 2015;15(11):16-17. doi:10.1080/15265161.2015.1088983
7. Malik AY. Different Context, Similar Motives: External Influences on Motivation. *Am J Bioeth.* 2015;15(11):26-28. doi:10.1080/15265161.2015.1088975
8. Staphorst M, Vathorst S van de. Empirical Data on Benefits Children Experience in Clinical Research. *Am J Bioeth.* 2015;15(11):20-21. doi:10.1080/15265161.2015.1089695
9. Spriggs M. Should We Tell Children and Young People About the Positive Experience of Taking Part in Clinical Trials? *Am J Bioeth.* 2015;15(11):35-36. doi:10.1080/15265161.2015.1088976
10. de Vries MC. The Use of Dogmas in Pediatric Research Ethics. *Am J Bioeth.* 2015;15(11):18-19. doi:10.1080/15265161.2015.1088984
11. Wright K, Collins S, Farsides B. Why Young People Participate in Clinical Trials and the Implications for Research Governance. *Am J Bioeth.* 2015;15(11):22-23. doi:10.1080/15265161.2015.1088981
12. Bell E. Young Persons in Research: A Call for the Engagement of Youth in Mental Health Research. *Am J Bioeth.* 2015;15(11):28-30. doi:10.1080/15265161.2015.1088977
13. Navratil J, McCauley HL, Marmol M, Barone J, Miller E. Involving Youth Voices in Research Protocol Reviews. *Am J Bioeth.* 2015;15(11):33-34. doi:10.1080/15265161.2015.1088979
14. Johnson LM, Unguru Y. Recruiting Children for Clinical Trials: Lessons From Pediatric Oncology. *Am J Bioeth.* 2015;15(11):24-26. doi:10.1080/15265161.2015.1088980
15. Tromp K, Vathorst S van de. Gatekeeping by Professionals in Recruitment of Pediatric Research Participants: Indeed an Undesirable Practice. *Am J Bioeth.* 2015;15(11):30-32. doi:10.1080/15265161.2015.1088978

16. Barned C, Dobson J, Stintzi A, Mack D, O'Doherty KC. Children's perspectives on the benefits and burdens of research participation. *AJOB Empir Bioeth.* 2018;9(1):19-28. doi:10.1080/23294515.2018.1430709
17. World Health Organization. Health Promotion Glossary 1986;1(1):113-27. doi:10.1093/heapro/1.1.113
18. Luna F. Elucidating the Concept of Vulnerability. *Int J Fem Approaches Bioeth.* 2009;2(1):121-139.
19. Luna F. Identifying and evaluating layers of vulnerability – a way forward. *Dev World Bioeth.* 2019;19(2):86-95. doi:10.1111/dewb.12206
20. Tromp K, Zwaan CM, van de Vathorst S. Motivations of children and their parents to participate in drug research: a systematic review. *Eur J Pediatr.* 2016;175(5):599-612. doi:10.1007/s00431-016-2715-9
21. Oyama B&. *Intergenerational Solidarity : Strengthening Economic and Social Ties* Background Paper. 2007;(October).
22. Staphorst MS, Hunfeld JAM, van de Vathorst S. Are positive experiences of children in non-therapeutic research justifiable research benefits? *J Med Ethics.* 2017:medethics-2016-103404. doi:10.1136/medethics-2016-103404
23. Luchtenberg M, Maeckelberghe E, Locock L, Powell L, Verhagen AAE. A Response to the Open Peer Commentaries on “Young People’s Experiences of Participation in Clinical Trials: Reasons for Taking Part.” *Am J Bioeth.* 2016;16(2):W10-W12. doi:10.1080/15265161.2015.1125968
24. Nuffield Council on Bioethics. *Children and Clinical Research: Ethical Issues* 2015. Available from: <https://www.nuffieldbioethics.org/assets/pdfs/Children-and-clinical-research.pdf>.
25. Dutch Medical Research Involving Human Subjects Act (WMO), 26 February 1998. Available from: <https://wetten.overheid.nl/BWBR0009408>. Accessed April 2, 2019
26. Grootens-Wiegers P, de Vries MC, van den Broek JM. Research information for minors: Suitable formats and readability. A systematic review. *J Paediatr Child Health.* 2015;51(5):505-511. doi:10.1111/jpc.12762
27. Unguru Y, Sill AM, Kamani N. The Experiences of Children Enrolled in Pediatric Oncology Research: Implications for Assent. *Pediatrics.* 2010;125(4):e876-e883. doi:10.1542/peds.2008-3429
28. Staphorst MS, Hunfeld JAM, van de Vathorst S, Passchier J, van Goudoever JB. Children's self reported discomforts as participants in clinical research. *Soc Sci Med.* 2015;142:154-162. doi:10.1016/j.socscimed.2015.08.019
29. Coyne I, Hayes E, Gallagher P, Regan G. *Giving Children a Voice: Investigation of Children's Participation in Consultation and Decision Making in Irish Hospitals.*; 2006. doi:ISBN 978-0755716623
30. Shah S, Whittle A, Wilfond B, Gensler G, Wendler D. How Do Institutional Review Boards Apply the Federal Risk and Benefit Standards for Pediatric Research? *JAMA* 2004;291(4):476-82. doi:10.1001/jama.291.4.476.

31. Carter B. Tick box for child? The ethical positioning of children as vulnerable, researchers as barbarians and reviewers as overly cautious. *Int J Nurs Stud.* 2009;46(6):858-864. doi:10.1016/j.ijnurstu.2009.01.003
32. Grootens-Wiegers P, de Vries MC, van Beusekom MM, van Dijck L, van den Broek JM. Comic strips help children understand medical research. Targeting the informed consent procedure to children's needs. *Patient Educ Couns.* 2015;98(4):518-524. doi:10.1016/j.pec.2014.12.005
33. Tait AR, Voepel-Lewis T, McGonegal M, Levine R. Evaluation of a prototype interactive consent program for pediatric clinical trials: A pilot study. *J Am Med Informatics Assoc.* 2012;19(E1):43-45. doi:10.1136/amiajnl-2011-000253
34. Sheridan R, Martin-Kerry J, Watt I, et al. User testing digital, multimedia information to inform children, adolescents and their parents about healthcare trials. *J Child Heal Care.* 2019;23(3):468-482. doi:10.1177/1367493518807325
35. Raphael JL, Wong SL. Rethinking informed consent in pediatric research: a time for regulatory policy change? *Pediatr Res.* 2018;84(4):477-478. doi:10.1038/s41390-018-0151-4
36. Abdel-Rahman SM. Facilitating Informed Permission/Assent/Consent in Pediatric Clinical Trials. *Pediatr Drugs.* 2019;21(4):205-214. doi:10.1007/s40272-019-00347-5
37. Dockett S, Perry B. Researching with young children: Seeking assent. *Child Indic Res.* 2011;4(2):231-247. doi:10.1007/s12187-010-9084-0
38. Budin-Ljøsne I, Teare HJA, Kaye J, et al. Dynamic Consent: A potential solution to some of the challenges of modern biomedical research. *BMC Med Ethics.* 2017;18(1):1-10. doi:10.1186/s12910-016-0162-9
39. Kadam RA. Informed consent process: A step towards making it meaningful! *Perspect Clin Res.* 2017;8:107-112. doi:10.4103/picr.PICR_147_16
40. Tromp K. Between protection and participation: Moral promises and perils in pediatric clinical research 2019. Erasmus University Rotterdam. Available from: <http://hdl.handle.net/1765/115316>
41. Piper H, Simons H. Ethical responsibility in social research. In: Somekh B, Lewin C, eds. *Research Methods in the Social Sciences.* First edit. London, UK. Sage Publications; 2005:56.
42. Grady C, Wiener L, Abdoler E, et al. Assent in research: The voices of adolescents. *J Adolesc Heal.* 2014;54(5):515-520. doi:10.1016/j.jadohealth.2014.02.005
43. Julia A. Snethen, Marion E. Broome KK, Janet A. Deatrck DBA. Family Patterns of Decision-Making in Pediatric Clinical Trials. *Res Nurs Health.* 2006;29:223-232. doi:10.1002/nur.20130.
44. Dekking SAS, Van Der Graaf R, Van Delden JJM. Voluntary Informed Consent in Paediatric Oncology Research. *Bioethics.* 2016;30(6):440-450. doi:10.1111/bioe.12237
45. Beauchamp TL, Childress JF. Professional-patient relationships. In: *Principles of Biomedical Ethics.* Seventh Ed. New York: Oxford University Press; 2013:331.
46. Hein IM, Troost PW, De Vries MC, Knibbe CAJ, Van Goudoever JB, Lindauer RJL. Why do children decide not to participate in clinical research: A quantitative and qualitative study. *Pediatr Res.* 2015;78(1):103-108. doi:10.1038/pr.2015.74

47. Dahan S, Jung C, Dassieu G, Durrmeyer X, Caeymaex L. Trust and consent: A prospective study on parents' perspective during a neonatal trial. *J Med Ethics*. 2020;1-6. doi:10.1136/medethics-2019-105597
48. Tromp K, van de Vathorst S. Patients' Trust as Fundament for Research Ethics Boards. *Am J Bioeth*. 2018;18(4):42-44. doi:10.1080/15265161.2018.1431713
49. O'Neill O. Linking Trust to Trustworthiness. *Int J Philos Stud*. 2018;26(2):293-300. doi:10.1080/09672559.2018.1454637
50. Johnsson L, Eriksson S, Helgesson G, Hansson MG. Making researchers moral: Why trustworthiness requires more than ethics guidelines and review. *Res Ethics*. 2014;10(1):29-46. doi:10.1177/1747016113504778
51. Goodin RE. Vulnerabilities and Responsibilities: An ethical defense of the welfare state. *Am Polit Sci Rev*. 1985;79(3):775-787. doi:10.2307/1956843
52. Hennink M, Hutter I, Bailey A. *Qualitative Research Methods*. Sage; 2015.
53. Bird D, Culley L, Lakhanpaul M. Why collaborate with children in health research: an analysis of the risks and benefits of collaboration with children. *Arch Dis Child - Educ Pract Ed*. 2013;98(2):42-48. doi:10.1136/archdischild-2012-303470
54. Taylor RM, Whelan JS, Gibson F, Morgan S, Fern LA. Involving young people in BRIGHTLIGHT from study inception to secondary data analysis: Insights from 10 years of user involvement. *Res Involv Engagem*. 2018;4(1):1-14. doi:10.1186/s40900-018-0135-x
55. Clavering EK, McLaughlin J. Children's participation in health research: From objects to agents? *Child Care Health Dev*. 2010;36(5):603-611. doi:10.1111/j.1365-2214.2010.01094.x
56. Preston J, Stones SR, Davies H, Preston J, Phillips B. How to involve children and young people in what is, after all, their research. *Arch Dis Child*. 2019;104(5):494-500. doi:10.1136/archdischild-2018-315118
57. Sonpal, K, Walker E, Swallow V, Brady L-M, Stones S. Report on Involving Children and Young People in Research. Southampton: INVOLVE. 2019. Available from: <https://www.invo.org.uk/wp-content/uploads/2019/06/77620-YPv3-Booklet-WEB.pdf>.
58. Blackburn S, McLachlan S, Jowett S, et al. The extent, quality and impact of patient and public involvement in primary care research: a mixed methods study. *Res Involv Engagem*. 2018;4(1):1-18. doi:10.1186/s40900-018-0100-8
59. Domecq JP, Prutsky G, Elraiyah T, et al. Patient engagement in research: a systematic review. *BMC Health Serv Res*. 2014;14(89):1-9. doi:10.1186/1472-6963-14-89
60. Kellett M, Forrest R, Dent N, Ward S. "Just teach us the skills please, we'll do the rest": Empowering ten-year-olds as active researchers. *Child Soc*. 2004;18(5):329-343. doi:10.1002/chi.807
61. Chappell P, Rule P, Dlamini M, Nkala N. Troubling power dynamics: Youth with disabilities as co-researchers in sexuality research in South Africa. *Childhood*. 2014;21(3):385-399. doi:10.1177/0907568214525427

62. McDonagh JE, Lunt L, Cresswell K, Parsons S, Tattersall R. Research priority setting by young people with rheumatic musculoskeletal disease. *Arch Dis Child*. 2019;104(2):204. doi:10.1136/archdischild-2018-315735
63. Gaillard S, Malik S, Preston J, et al. Involving children and young people in clinical research through the forum of a European Young Persons' Advisory Group: needs and challenges. *Fundam Clin Pharmacol*. 2018;32(4):357-362. doi:10.1111/fcp.12360
64. INVOLVE. Involving children and young people in research: top tips and essential key issues for researchers. 2016:1-11. Available from: <http://www.invo.org.uk/wp-content/uploads/2016/01/involvingcyp-tips-keyissues-January2016.pdf>.
65. Preston J, Hoff W van't, Dicks P. GenerationR. NIHR 2014. Available from: <https://generationr.org.uk/about/>.
66. European Young Person's Advocacy Group (eYPAGnet). Available from: <https://www.eypagnet.eu/>.
67. Thompson H, Frederico N, Smith SR, et al. iCAN: Providing a voice for children and families in pediatric research. *Ther Innov Regul Sci*. 2015;49(5):673-679. doi:10.1177/2168479015601344
68. International Children's Advisory Network (iCAN). Available from: <https://www.icanresearch.org/about>.
69. Stichting Kind en Ziekenhuis. Oprichten KinderAdviesRaad. 2013:6. Available from: www.kindenziekenhuis.nl/handvest.
70. Kinderadviesraden. Stichting Kind en Ziekenhuis. Available from: <https://kindenziekenhuis.nl/project/kinderadviesraden/>.
71. Bailey S, Boddy K, Briscoe S, Morris C. Involving disabled children and young people as partners in research: A systematic review. *Child Care Health Dev*. 2015;41(4):505-514. doi:10.1111/cch.12197
72. Staley K. 'Is it worth doing?' Measuring the impact of patient and public involvement in research. *Res Involv Engagem*. 2015;1(1):1-10. doi:10.1186/s40900-015-0008-5
73. Best P, Badham J, Corepal R, et al. Network methods to support user involvement in qualitative data analyses: An introduction to Participatory Theme Elicitation. *Trials*. 2017;18(1):1-14. doi:10.1186/s13063-017-2289-5
74. Locock L, Kirkpatrick S, Brading L, et al. Involving service users in the qualitative analysis of patient narratives to support healthcare quality improvement. *Res Involv Engagem*. 2019;5(1):1-11. doi:10.1186/s40900-018-0133-z
75. Staley K, Abbey-Vital I, Nolan C. The impact of involvement on researchers: A learning experience. *Res Involv Engagem*. 2017;3(1):1-9. doi:10.1186/s40900-017-0071-1
76. Dovey-Pearce G, Walker S, Fairgrieve S, Parker M, Rapley T. The burden of proof: The process of involving young people in research. *Heal Expect*. 2019;22(3):465-474. doi:10.1111/hex.12870
77. Brady LM, Templeton L, Toner P, et al. Involving young people in drug and alcohol research. *Drugs and Alcohol Today*. 2018;18(1):28-38. doi:10.1108/DAT-08-2017-0039
78. Cambridge University Press. Meaning of mind map in English. *Cambridge Dictionary* 2019. Available from: <https://dictionary.cambridge.org/dictionary/english/mind-map>.

79. Hewitt J. Ethical components of researcher-researched relationships in qualitative interviewing. *Qual Health Res.* 2007;17(8):1149-1159. doi:10.1177/1049732307308305
80. Alldred P, Gillies V. Eliciting Research Accounts: Re/Producing Modern Subjects. In: *Ethics in Qualitative Research.* Sage London; 2002. doi:10.4135/9781473913912.n10
81. Garrison W, Felice ME. Chapter 6 - ADOLESCENCE. In: Carey WB, Crocker AC, Coleman WL, Elias ER, Feldman HM, eds. *Developmental-Behavioral Pediatrics (Fourth Edition).* Fourth Edi. Philadelphia: W.B. Saunders; 2009:62-73. doi:10.1016/B978-1-4160-3370-7.00006-7
82. Christie D, Viner R. Adolescent development. *BMJ.* 2005;330:301. doi:10.1136/bmj.330.7486.301
83. Bradbury-Jones C, Taylor J. Engaging with children as co-researchers: challenges, counter-challenges and solutions. *Int J Soc Res Methodol.* 2015;18(2):161-173. doi:10.1080/13645579.2013.864589
84. Jamal F, Langford R, Daniels P, Thomas J, Harden A, Bonell C. Consulting with young people to inform systematic reviews: An example from a review on the effects of schools on health. *Heal Expect.* 2015;18(6):3225-3235. doi:10.1111/hex.12312
85. Hart R. Children's participation: From tokenism to citizenship. *Innocenti Essay.* UNICEF Innocenti Research Centre 1992;4:1-44 Available from: <https://www.unicef-irc.org/publications/100-childrens-participation-from-tokenism-to-citizenship.html>
86. Health Talk. Credits. Clinical trials and medical research (young people) 2019. Available from: <https://healthtalk.org/clinical-trials-medical-research/credits>.
87. McCoy MS, Warsh J, Rand L, Parker M, Sheehan M. Patient and public involvement: Two sides of the same coin or different coins altogether? *Bioethics.* 2019;35:628-632. doi:10.1111/bioe.12584
88. Odgers HL, Tong A, Lopez-Vargas P, et al. Research priority setting in childhood chronic disease: A systematic review. *Arch Dis Child.* 2018;103(10):942-951. doi:10.1136/archdischild-2017-314631
89. Tunnicliffe DJ, Singh-Grewal D, Craig JC, et al. Healthcare and research priorities of adolescents and young adults with systemic lupus erythematosus: A mixed-methods study. *J Rheumatol.* 2017;44(4):444-451. doi:10.3899/jrheum.160720
90. Parsons S, Thomson W, Cresswell K, Starling B, McDonagh JE. What do young people with rheumatic disease believe to be important to research about their condition? A UK-wide study. *Pediatr Rheumatol.* 2017;15(1):1-11. doi:10.1186/s12969-017-0181-1

Acht ogen

Onderzoek met kinderen is heel belangrijk om
meer kinderen beter te maken
maar kinderen hebben ook een stem
waar we naar moeten luisteren.

Leren onderzoeken is ook leren
vragen te stellen over antwoorden
leren dat ik misschien niet alles begrijp
omdat ik volwassen ben
leren dat ik misschien niet altijd
met mijn eigen oren moet luisteren.

Zijn kinderen niet hetzelfde als volwassenen?

Ze zijn natuurlijk allebei mensen
maar kinderen denken wel anders dan volwassenen
omdat ze niet dezelfde dingen weten
kijken ze ook anders naar de wereld
ze kunnen zelf vinden wat ze van mensen vinden.

Ik leer dingen die we niet doen op school
door te luisteren naar verhalen
ik leer hoe het is om iemand anders te zijn
hoe het voelt om ziek te zijn
in een lichaam te wonen dat niet werkt
zoals het mijne.

Ik leer om samen te werken
we zijn allebei een glas half vol
vullen elkaar aan tot de rand
zonder dat het overstroomt.

We leren de wereld op een andere manier begrijpen
door vragen te stellen, samen te werken
van gedachten, ideeën een web te weven
als spinnen leren we lopen over draden
ineens hebben we acht ogen
zien we nieuwe dingen.

