**Author**: Grootens-Wiegers, P.
**Title**: Targeted informed consent : empowering young participants in medical-scientific research
**Issue Date**: 2016-12-06

# CHAPTER 6

## *'It was my own decision and that of someone else […] in fact, 100% of the three of us.'*

## Perspectives of Adolescents of Decision-Making about Clinical Research Participation

Grootens-Wiegers, P., Van Rossum, A.M.C., Visser, E.G., Van Waardhuizen, C.N.,
De Wildt, S.N., Sweep, B., Van den Broek, J. M., & De Vries, M. C.

(manuscript in preparation)

## Abstract

**Objectives:** To be able to truly involve adolescents in decision-making about clinical research participation, we need more insight in the perspective of adolescents themselves. To this end, an exploratory study was set up in which adolescents in an ongoing biobank study were consulted to test a tentative decision assessment tool.

**Methods:** The perspectives of adolescents (n=8) concerning participation in decision-making for research participation were explored in interviews with a tentative tool, which covered six topics: information material usage, understanding, disease perceptions, anxiety, decision-making process and role sharing.

**Results:** All adolescents unequivocally expressed the desire to be autonomously involved in decision-making, but also wanted advice from their parents. The extent of the preferred role of adolescent versus parents varied between individuals. In decision-making, adolescents relied on parents for information. More than half hardly used the information material.

**Conclusions:** Adolescents in our exploratory study preferred a shared decision-making process. The extent of sharing varied between individuals. The decision assessment tool was a fruitful starting point to discuss adolescents' perspectives and may aid in tailoring the situation to the individual to achieve optimal participation practices.

**Practice Implications:** Consulting adolescents about their preferences concerning decision-making using the tool may facilitate tailoring of the shared decision-making process and optimizing the developing autonomy of minors.

## Introduction

There is an increasing attention for participation of minors in matters that affect them in general, and also more specifically to involve them in healthcare decision-making (Clavering & McLaughlin, 2010; Committee on Bioethics, 1995; Coyne & Harder, 2011; Unicef, 1989). In spite of this attention, true implementation of participation in clinical practice, let alone research participation, is poor (Weil, Lemer, Webb, & Hargreaves, 2015). Minors are often not heard, nor consulted about decisions that concern them (Coyne & Harder, 2011; Dedding et al., 2015; De Vries, 2015). A recent review shows that the skills, wishes and values of minors are seldom taken into account in medical decision-making (Virkki, Tolonen, Koskimaa, & Paavilainen, 2014). Discussions during consults shortly address the minor, but predominantly take place between parents and health professionals (Coyne & Gallagher, 2011; Tates, Meeuwesen, Bensing, & Elbers, 2002).

The discrepancy between the voiced awareness towards participation of minors in decisions about research participation and current practice is caused by (1) a lack of evidence-based insights guiding participation in practice (Weil et al., 2015), and (2) a lack of adequate age-adjusted information supporting healthcare decisions (Appelbaum & Grisso, 2001).

### Lack of evidence-based insights

There is a lack of insight in how to translate the awareness of the value of participation into actual participatory clinical practice. Questions concerning the extent to which minors can and should be involved, practical ways to do so, and the preferences of minors are not sufficiently met by evidence-based answers.

Recent research systematically evaluated the decision-making competence of minors participating in clinical research and suggests that minors from around the age of 12 years old are capable of being involved in decision-making, but that this competence depends upon facilitating situational factors (Hein et al., 2014; Hein, Troost, Broersma, et al., 2015; Hein, Troost, Lindeboom, et al., 2015). An essential situational factor is the attitude of healthcare professionals and parents or caretakers (Martenson & Fagerskiold, 2008). The adults' attitudes can significantly influence the extent to which a minor is empowered to truly participate in decisions, for example by explaining complicated concepts, and addressing the minor in the conversation (Coyne & Gallagher, 2011; Martenson & Fagerskiold, 2008). However, more evidence is needed to guide which attitude is most facilitating and how to achieve optimal dynamics between involved adults and minors (Young et al., 2010).

The minor itself also plays a role in these dynamics. In order to empower minors to participate in a successful and satisfying way, we need to understand how they wish to be involved in decision-making (Clavering & McLaughlin, 2010). Although there are numerous studies on the role of adolescents in decision-making, the majority of these studies consult parents instead of the minors. However, research has demonstrated that parents are unreliable proxy reporters for their child (Lipstein et al., 2015). Research consulting the people at stake - minors - is scarce. More evidence is needed to inform how they experience the decision-making process, to what extent they prefer to be involved, and how they view their own role (Clavering & McLaughlin, 2010; Dedding et al., 2015; Ruhe, Wangmo, Badarau, Elger, & Niggli, 2015).

### Empowerment by information supply

A prerequisite for making an informed decision about clinical research participation is to understand what is at stake (Appelbaum & Grisso, 2001; De Vries et al., 2010). Various studies demonstrate that information material for minors for decisions about research participation is not written at a comprehensible level (Grootens-Wiegers, De Vries, Vossen, et al., 2015; Menoni et al., 2011; Tarnowski et al., 1990). In addition, verbal information supply also fails, as doctor-patient conversations are commonly only directed at parents or caretakers, rather than addressing the minor (Tates, Meeuwesen, Bensing, & Elbers, 2002; Tates, Meeuwesen, Elbers, & Bensing, 2002). As a result, children and adolescents are left out of an important step in decision-making: gathering information about the options in order to be able to reason about a decision (Appelbaum & Grisso, 2001). Without adequate information a minor can impossibly use its full potential to participate in the decision-making process (Kuther & Posada, 2004). Various studies demonstrated that minors have limited understanding of essential research concepts or even lack the awareness that their current treatment is in fact part of a clinical trial (O'Lonergan & Forster-Harwood, 2011; Tait et al., 2003, 2007; Unguru et al., 2010). Only when minors are addressed at the appropriate level in both verbal and written information provision, can they be expected to play a meaningful role in the decision-making process (Coyne & Gallagher, 2011).

### Aim

In order to advance the involvement of children and adolescents in decisions about clinical research participation, it is vital that they are empowered by comprehensible information, and that evidence-based insights are gained to guide participation practice. In order to address the first issue, we have previously developed novel information material in collaboration with children and adolescents. In this chapter, a pilot study is presented in which we provide adolescents participating in a biobank study with the novel information material, and subsequently consult them about their perspectives on the decision-making process. To this end, we have developed a 'decision assessment tool' to be used in interviews, to cover various aspects of decision-making. Our aim in this pilot study is (1) to perform an initial assessment on the suitability of using novel information material in clinical practice, and compare this material to the standard material; (2) to gain insight in the experiences of adolescents involved in the decision-making process about research participation; and (3) to examine the feasibility of a short interview tool for further research and for use as a practical guide.

## Methods

### Ethical approval

The research protocol for this study was examined by the medical-ethical committee of the Erasmus University Medical Center and it was deemed that following the Dutch law of medical research in humans, no ethical approval was required for this study.

### Sample

Participants were recruited between February and May 2016 from an ongoing study: the Sophia Biobank at the Erasmus MC Sophia in Rotterdam, the Netherlands. The Sophia Biobank is the first European-registered pediatric hospital biobank, collecting samples from healthy children and adolescents. Children and adolescents undergoing an elective surgery procedure but otherwise healthy given certain selection criteria, are requested to donate blood for the biobank, which is drawn while the patient receives an intravenous-catheter during the anesthetic pre-operation procedures.

Adolescents in the age of 12-17 were selected for inclusion, as this is the age category for official involvement in the informed consent process in the Netherlands. Adolescents eligible for the Sophia Biobank received written information material at home two weeks before the procedure. Subsequently a research nurse called to ask about participation in the biobank and also in a single extra interview about the decision-making process. Adolescents were then called by the interviewing researcher to make an appointment for the interview.

### Information material

A fundamental principle in research ethics is that participants must give consent prior to the research, based on disclosed information (World Medical Association, 2013). For biobank research, it is harder to provide fully disclosed information as the general purpose is to store collected samples and to facilitate future research that may be conducted many years from now. Disclosed information about (future) research and intended purposes can only be general, not specific. Giving participants comprehensible information where this uncertainty is clarified is therefore of key importance.

To compare the effect of the new information material on the decision-making process, participants received one of two types of a Patient Information Form (PIF) about the Sophia Biobank: a standard, textual PIF or a novel PIF. Participants were randomized to receive one of the two PIF types by distribution of different types in alternating weeks.

These PIFs were official legal documents, as in the Netherlands a double consent is mandatory for research participants aged 12 years or older, meaning that adolescents from the age of 12-17 have to consent as well as their parents. The standard PIF consisted of three pages of plain text explaining all legally mandatory informed consent aspects, and one page for signing for informed consent.

The novel PIF consisted of a comic strip booklet explaining essential research concepts, (e.g. voluntariness and anonymity) and an illustrated study-specific form covering all mandatory information. This novel material was developed in a participatory process involving all end-users (minors, parents, pediatricians and research nurses), and was positively evaluated in a previous study (Grootens-Wiegers, De Vries, Van Beusekom, Van Dijck, & Van den Broek, 2015).

The average readability of the PIFs was measured with Flesch Reading Ease (FRE; 0-100 scale were 0 is easiest), Flesch-Douma (F-D; adapted for Dutch language), and Flesch-Kincaid Grade Level (F-K; indicating minimum years of reading experience required). A readability level of at least 65 or grade level of maximum 8 is recommended for adults (CCMO, 2008b), no recommendations currently exist for adolescents. Readability for the standard PIF was FRE 31.88, F-D 47.52, and F-K 11.75. The average readability of the novel PIF was FRE 57.39, F-D 70,76, and F-K 7.63. As the novel PIF contained relevant images it is probable that the practical readability for adolescents was even better, as they are better able to read complicated text if accompanied by visual support (Grootens-Wiegers, De Vries, Vossen, et al., 2015).

### Decision assessment tool

A tentative decision assessment tool was developed based on combining interview studies from Tait et al. (Tait et al., 2003) on the understanding of research aspects, and Lipstein et al. (2013) consulting adolescents about treatment decisions. We aimed to build upon these studies to create a tool to consult adolescents about their understanding, their view on the decision-making process and their desired role in it. The resulting tool consisted of questions on (a) demographics; (b) evaluation of information material; (c) feeling of understanding and actual understanding (as in Tait et al., 2003); (d) disease perceptions based on drawings, as described before (Broadbent, Ellis, Gamble, & Petrie, 2006); (e) anxiety about surgery and research, on a scale from 1 (not anxious) to 10 (very anxious); and (f) questions evaluating the decision-making process, initiated by an exercise to draw a pie chart indicating the role sharing in the decision-making process, and a second pie chart with the preferred sharing for a future decision (adapted from Lipstein, Muething, Dodds, & Britto, 2013). We intended the tool to be used to gauge the individual adolescent's perspectives in order to tailor the informed consent process and optimally involve adolescents.

### Data collection and analysis

The interviews were conducted by a student researcher who either visited the adolescents at home or met at the hospital cafeteria, depending on the preference of the adolescent. Adolescents and parents signed a consent form (of 10 sentences long) prior to the interview. A parent (in one case both parents) accompanied the participant during all interviews, but questions were directed at the adolescent. The adolescent was also made explicitly aware that answering the question was not obligatory. The interviews were conducted in approximately 20 minutes.

Interviews were audio-recorded and transcribed verbatim. Transcripts were analyzed with QDA Miner 4 Lite using the thematic framework approach (Ritchie, Spencer, & O'Connor, 2003). The first researcher (PGW) identified initial themes and applied these on two interviews. Authors PGW and BS discussed the framework and themes, until consensus was reached. Subsequently author PGW labelled all interviews and identified the main themes: 'information use', 'decision-making process', and 'perspectives on decision-making role'.

## Results

### Inclusion

A total of ten participants of the Sophia Biobank agreed to participate in the timespan of this pilot study. Of these, eight participants were included, and two reported to have second thoughts and withdrew. The included adolescents ranged in age from 12 to 17 years old, all were native Dutch speakers. Six participants had received the novel PIF and 2 the standard PIF. We aimed to interview the adolescents before the surgery, but due to time constraints some were interviewed afterwards. One adolescent consented to participate in the Sophia Biobank, but blood drawing failed due to medical reasons; this adolescent was still included in our study as the decision-making process happened beforehand.

### Anxiety

All participants indicated to be somewhat anxious for the surgery, ranging from a 5 tot an 8 on a scale from 1 (not anxious) to 10 (very anxious). One participant was not anxious at all and explained that he had already had 3 previous surgeries. All adolescents expressed that research participation did not influence their anxiety for the surgery.

### Disease perceptions

Participants were asked to make free drawings about the reason why they needed surgery. All but one made a simplified drawing of the human body or a part of it, showing a defect, e.g. crossed eyes or a bent back. When asked to elaborate, they talked about a single defect that was mildly interfering with their life. Only one participant created a more interpretative drawing, showing two persons, one with a large birthmark and another shouting harassing words, and explained that the surgery was not because of medical necessity but because of esthetic and personal reasons.

### Understanding

Participants graded their understanding of the biobank study on a scale of 1 (poor) to 10 (good). They all declared to have a medium to good understanding of the discussed research aspects: goal (average 8.3), procedure (average 8.4), personal benefit (7.0), benefit for others (8.4), alternative to participation (7.4), and voluntary participation (8.9). Understanding of the right to withdraw was poor in half of the participants (total average 5.8), mainly because of confusion how to withdraw from a single event during anesthesia. Subsequent open questions to elaborate on these concepts revealed that the participants indeed had a good understanding of most aspects, although some were unsure how exactly others would benefit from their participation, three persons were confused by the right to withdraw, and all but one were unable to describe the research goal (creating a biobank for future research) beyond the collection of blood to compare this to other blood.

### Decision-making process

All participants described the process of decision-making as short and very straightforward. Two adolescents reported to have been informed by their doctor about the upcoming request for participation in the biobank. Most recalled to have received information material by mail, which they either read or merely looked at, and then shortly discussed the research with their parents. Participants mentioned that the decision to participate was not hard, because it was *'only donating blood'*, and there would be no extra burden. Adolescents did not mention any disadvantages of participation, or explicitly mentioned that there were only advantages: *'helping other children'* and *'for science'*. One adolescent summarized this as *'you can make other children well and you do not suffer from it at all'*. When they were in the hospital for surgery, the adolescents had a short conversation with the research nurse and signed the consent form. None of the participants described in-depth discussions about participation, or the need to gain more information to reach a conclusion, or as one participant said: *'I think the story was just clear what it was about […] so I did not need to ask things or to discuss things'*.

### Information use

All participants except one had seen the information material, but only two had thoroughly read the information before the surgery, and one had read it after the surgery, but did have a conversation about the biobank study with his parents before signing consent.

The other five participants had either only looked at the pictures in the novel material (n=3), or read half of the standard PIF (n=2). As one participant put it: *'I did not see many disadvantages, so I thought it's fine'*, expressing that he did not feel the need to read up on the research. Accordingly, none of the participants reported to have looked for more information sources or ask questions to the doctor or research nurse. One participant mentioned that he did hardly inform himself before the decision: *'We did receive the information, but I forgot to take a look at it, to be honest. And then she [research nurse] came with it […] and I went quickly over what she gave me.'*

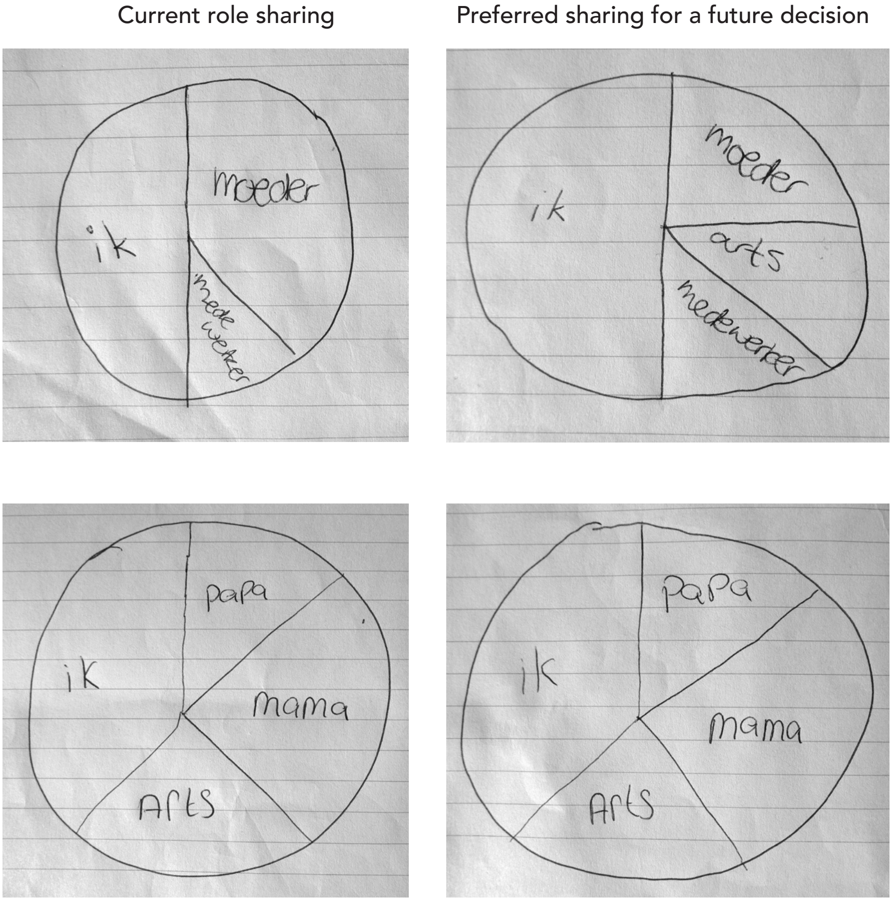
All participants were moderately satisfied with the information material and indicated that the information was easy to read and understand and was mildly interesting. One participant (age 14) remarked that the comic strip was at times a bit too childish for his age, and another (age 17) said to find the standard material tedious. Unfortunately, we were unable to make a comparison between the standard PIF and the novel PIF, because of the small sample size in our pilot study.

### Perspective on decision-making role

In the pie chart exercise, all adolescents reported that they were involved in the decision-making, ranging in share from 20%-80% (see figure 1 for an example). Also, either the mother or both parents played a role in the decision, ranging from 20%-80%. Two adolescents also recognized the doctor as a party, and one the research nurse, based on receiving explanation about the research, with the share ranging from 10%-30%.

Only three participants shared the preferred roles for a future decision differently; two wanted the doctor and/or research nurse to have a greater share as the doctor could give informed advice about participation, and the other wished to discuss the research participation with a friend and ask for her advice about what she would do.

The adolescents expressed unequivocally that they wanted to be involved in the decision-making about research participation, responding; *'It is good that you can choose for yourself '; 'As soon as it is about your own body, I do want to decide it for myself'; and 'I am the one who needs to donate the blood'*. However, the word 'we' was also frequently used in participants' accounts, demonstrating that the adolescents did not decide on their own, but rather that the process was experienced as shared decision-making. One of the adolescents stated that *'I think it is important that they [parents] give advice, how they think about it'*, and another mentioned as reason *'I think that she [mother] can make* *a good decision… she knows everything about me'*. Another participant summarized it as *'It was my own decision and that of someone else […] in fact, 100% of the three of us'*.


Current role sharing

Preferred sharing for a future decision

**Figure 1.** Examples of the pie charts from two participants, describing the current role sharing and the desired role sharing for a future decision. (ik = me; moeder= mother; arts = doctor; medewerker = employee).

### Feasibility of using the decision assessment tool

The questions and exercises in the decision assessment tool were well understood by the adolescents and helped to initiate a conversation in which the adolescents expressed their personal opinions and thoughts. The drawing exercise for disease perceptions enabled the adolescents to formulate their perspective on the reason for surgery. The use of a pie chart exercise (based on Lipstein et al., 2013) was suitable for this age group from 12-16 years old, when the concept of a pie chart was explained carefully. The pie charts appeared to be a fruitful starting point to discuss the roles of adolescents in the decision and the preferred share for a future decision.

## Discussion and Conclusion

### Discussion

An exploratory study was performed in which adolescents were consulted about their perspectives on their role in decision-making for clinical research participation, with a tentative decision assessment tool. The tool covered a number of aspects related to decision-making: usage of information material, understanding, disease perceptions, anxiety, decision-making process and sharing of roles.

### Information use

The novel information material was positively evaluated by the adolescents, although more than half had not completely read the material. Participants reported that they did not feel the need to be thoroughly informed, because they felt it was not a complex decision to make. This is consistent with the experience of the involved research nurse, who reported that many participants of the Sophia Biobank hardly used the information material. Although it is reported in other studies that minors express the desire to be informed (Van der Pal et al., 2010), this was not confirmed by the current study. This is likely due to the rather simple nature of participation in the biobank research. It is possible that adolescents participating in more invasive or longitudinal studies feel more personally involved and are more motivated to be well-informed. It is also possible that adolescents in general do not care much for the written information, but rather rely on adults to inform them, as is reported elsewhere (Coyne, Amory, Gibson, & Kiernan, 2016). In that case, the reported misunderstandings among minors might not only originate from the poor quality of the information material, but also from poorly informed parents, or even due to the low quality of information material for parents (Kass et al., 2011).

### Perspective on the decision-making process

Participants experienced the decision-making as straightforward and not many factors were contemplated in order to reach a conclusion: participants reported that the lack of burden and the potential to help others made them decide to participate without further consideration. Participants predominantly perceived the reason for surgery as mildly affecting their quality of life. Some were anxious for the surgery, but all reported that participation in the Sophia Biobank did not play a role in this anxiety, consistent with their expectation of the absence of burden.

All adolescents had participated in the decision about participation in the Sophia Biobank research and all expressed the desire to be involved in decision-making about their own body. In addition, all of them also mentioned the need for advice from their parents and sometimes their doctor. This is consistent with a recent study by our group, in which children and adolescents expressed in a survey that they wanted to be involved in decisions, but together with their parents, because they *'know what it is about'* (unpublished results). The adolescents mostly relied on their parents for information about the decision. This corresponds with a recent study reporting that children relied on their parents to share information and interpret it (Coyne et al., 2016).

Not all participants assigned their parents a similar share in decision-making, some preferred to have a larger share for themselves (up to 80%) and some preferred either the mother or both of the parents to be the predominant party (up to 80%). The extent to which adolescents wished to be involved in the decision-making process thus varied per person, consistent with earlier findings (Coyne & Gallagher, 2011; Coyne & Harder, 2011). Also, the family dynamics varied, in some the adolescent was very dependent upon information supply and advice from the parents, whereas in other cases, the adolescents mentioned that the parents had put emphasis on responsibility of the adolescent in the decision, as reported before (Snethen, Broome, Knafl, Deatrick, & Angst, 2006). Participation of adolescents is thus not an on-or-off phenomenon, but rather varies per individual and family dynamics.

### Evaluation of the decision assessment tool

Using the tentative decision assessment tool, we were able to gain insight in the opinions, experiences and preferences of adolescents for participation in decision-making. The decision assessment tool could be useful in further studies on the perspectives of adolescents and create more evidence to guide participation of adolescents in decisions about clinical research. In addition, the tool, or a part of it such as the pie chart exercise, could be used in clinical practice in order to gauge the standpoint and preferences of the individual minor, in order to target the information and decision process to the individual.

### Limitations

This study has several limitations, impairing generalizability of the findings. First, the sample size was small, because of the setup of this pilot study within a limited time period. As a result, we were unable to compare the novel material to the standard material. In addition, only participants who decided to participate in the Sophia Biobank were included due to logistic reasons, possibly leading to a bias. Also, a parent was always present during the interview, which may have interfered with the perceived freedom of the adolescent to speak freely. In addition, the proposed decision assessment tool was used without validation, as this pilot study was an initial exploration of the feasibility of the tool. Further research to validate and optimize the tool is necessary before future implementation.

### Conclusion

Surprisingly, the quality of the written information material did not play a major role in the decision-making of adolescents asked for informed consent to participate in a biobank study. Minors preferred a shared decision-making approach in which they rely on their parents and sometimes on the research nurse or doctor for information and advice. However, the preferred sharing varies between individuals. The proposed decision assessment tool may aid in tailoring the situation to the individual to guide optimal participation in research practice and could also be used to further study optimal ways to stimulate participation of adolescents.

### Practice implications

In order to improve the participation of adolescents in clinical research, more research should be directed at the perspective of adolescents themselves. Only by doing so, we will gain a better understanding of how to optimally support adolescents in decision-making about research participation. Adolescents may rely more on parents as an information source than on supplied information material, emphasizing the importance of adequately informing the parents.