Navigating complexity through intuition and evidence-based guidelines: a mix-methods study among child and youth healthcare professionals

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Abstract

Background: Dutch child and youth health care (CYHC) professionals monitor and assess the well-being of children. One of their main concerns is identifying cases of child abuse, which is an arduous and sensitive task. In these contexts, CYHC-professionals use both evidence-based guidelines aimed at increasing the quality of care through rationalised decision-making, and intuition. These two practices are seen as being at odds with each other, yet empirical research has shown that both are needed in healthcare. This study aims to unravel how intuition is perceived and used by Dutch CYHC-professionals when identifying and working with cases of child abuse, and how this relates to their evidence-based guidelines.

Methods: A sequential exploratory mixed-methods design: in-depth semi-structured interviews with CYHC-practitioners focused on perceptions on intuition, which were followed by a survey amongst CYHC-professionals on the recognition and use of the concept.

Results: The majority of CYHC-professionals recognise and use intuition in their daily work, stating that it is necessary in their profession. CYHC-professionals use intuition to: 1) sense that something is off, 2) differentiate between 'normal' and 'abnormal', 3) assess risks, 4) weigh secondary information and 5) communicate with parents. At the same time, they warn for its dangers as it may lead to 'tunnel vision' and false accusations.

Conclusion: Intuition is experienced as an integral part of the work of CYHC-professionals. It is stated to be particularly useful in the case of child abuse, which is inherently complex as signs and evidence of abuse are hidden, subtle and unique in each case. CYHC- professionals use intuition to manage and navigate this complexity. There is an opportunity for guidelines to support reflection and intuition as a 'good care' practice.

Background

Intuition or evidence in child and youth health care?

The World Health Organisation reports that worldwide, one in four adults were physically abused as children [1]. This widespread, complex and sensitive issue requires careful responses from child welfare organisations. Signs of abuse can be hard to detect, hidden, multi-interpretable and identification processes are reliant on personal judgement of professionals [2-5]. Even the definitions of 'abuse' or 'neglect' are contested, as some aspects have blurred boundaries subject to moral, cultural and contextual interpretations of 'healthy families' [6-8]. It has been suspected that many cases of child abuse are missed each year, due to the inherent complexity of child abuse [6, 7, 9].

This issue is being dealt with by different categories of professionals. In the Netherlands one of the most involved ones are Child and youth health care practitioners (*Dutch: jeugdartsen).* They have a medical background and are the gatekeepers to the Dutch child and youth health care (CYHC) system[1]. Together

with an assistant and nurses, CYHC-practitioners are tasked with monitoring and assessing the mental, social and physical well-being of all children from birth to age nineteen through regular, voluntary visits in both CYHC-centres and schools. When CYHC-practitioners find signs and evidence of abuse, they can suggest help for the family or, in severe cases, send the family to other child welfare institutions, which will investigate whether families need support, intervention or legal action [10].

CYHC-practitioners and their team are key actors in detecting child abuse in the Netherlands. They identify and weigh suspected cases of child abuse through home or school visits, conversations and tips from people in the child's network. In their work, CYHC-professionals need to work under constraints, such as time pressure and have to navigate multiple actors with different perspectives on child abuse notions of 'healthy families' [8, 11, 12]. Moreover, much of their work is challenged by a lack of solid evidence while the amount of information they have to take into account is vast [11]. Studies have shown that CYHC-professionals rely on informal skills or knowledge practices to make sense of their cases [11, 13, 14]. Fuelled by public inquiries and attempts to modernise the field, there has been, similar to the upsurge of evidence-based medicine in other care domains, a movement towards creating standardised guidelines on child abuse to guide CYHC-professionals [11, 14]. Yet, one of the most prevalent mechanisms of informal knowledge practices is *intuition* [4, 8, 15, 16]. While there is consensus on the existence and importance of the intuition in many fields, such as healthcare, management or psychology, there is still much unknown about how it is used in practice, even though it is commonly contrasted with attempts to make practice more evidence-based [17, 18].

This study aims to unravel how intuition is perceived and used by Dutch CYHC-practitioners when identifying and working with cases of child abuse, and how this relates to their guidelines. The study is guided by the research question: *How do CYHC-practitioners understand the role of intuition and its relation to evidence-based medicine in their work related to cases of child abuse?* The conducted research consists of in-depth, explorative and semi-structured interviews with Dutch CYHC-practitioners on their perspective on the use of intuition in the case of child abuse and a survey on the recognition and use of intuition, which was spread amongst CYHC-professionals (practitioners, assistants and nurses). This article argues that intuition is a practice which allows CYHC-practitioners to manage and navigate the complexity involved in their cases, evidence and communications.

Child abuse guidelines and informal knowledge practices

When CYHC-professionals look into suspected cases of child abuse, multiple complexities meet [19, 20]. On one hand, there are different notions and definitions of 'abuse', 'safety' and 'healthy', but also of what a 'family' is and what it should look like [8]. On the other hand, CYHC-professionals are having to deal with additional complicating factors: shortage and large turnover of staff, a heavy workload, time-pressure and need to work together with organisations and actors who may have different perspectives and ideas on what is best for families [11, 14, 20]. In grasping the situation and identifying whether children are in danger, CYHC-practitioners need to make sense of all these different realities and engage

in *coordination work,* through which they navigate the complex situation and make decisions on what a family needs [21].

Acknowledgement of complexities in identifying child abuse has led to attempts at modernising the field and lowering its uncertainty by standardising assessments, guidelines and instruments [14, 16]. This is a trend which can also be seen in the Netherlands. In the investigation of suspected cases of child abuse, CYHC-professionals are guided by evidence-based guidelines, which aim to improve the quality of care and prevention [22, 23]. These guidelines emphasise the importance of collecting factual evidence, on which CYHC-professionals ought to base their decisions [2, 16]. Broadhurst et al. (2010) state that in this trend towards standardised guidelines, there is less room for soft or informal skills. At the same time, multiple studies show that in work in which professionals deal with complexity and uncertainty, soft and informal skills are highly prevalent and useful [14, 18, 24-26]. As the importance of these skills are acknowledged, Dutch clinical guidelines have started to include informal knowledge practices, mainly the use of intuition [27-29].

According to the Dutch guidelines for child abuse, CYHC-practitioners should “develop their intuition well” (p.84), but “avoid basing decisions on it” (p.71) and “check their intuition with factual evidence” (p.81) [2]. The guidelines seem to send out a rather ambiguous message and an explanation of *what* intuition is, *how* to develop it and *how* to use it in practice is lacking. The advice on intuition in the Dutch guideline is based on an article by Munro (1999) who describes intuition as fast decision-making that is on a spectrum with rationality. She warns for unguided intuitive decision-making in child care, which is prone to error and bias as CYHC-professionals often deal with unreliable evidence [30]. In order to support CYHC-practitioners in the detection of child abuse and their decision-making, there is a need for research on the use of intuition in practice and how this can be supported by guidelines.

Intuition

While there is consensus on the existence and usefulness of intuition in many fields, this is not the case for its definition [17]. The concept has been studied in phenomenology and with the use of qualitative methods in nursing studies, but most criticism comes from the natural sciences. In this ongoing discussion, three standpoints can be recognized: intuition is seen as 1) a form of expert knowledge, 2) a mode of thought and 3) a knowledge practice.

Brenner and Tanner (1987) were among the most prominent authors to state the importance of intuition in nursing. They showed that intuition is seen as inferior to statistical, technological and numerical data, as it is deemed too feminine, mysterious and subjective to have a place in formal logic or rational calculation. They aimed to demystify intuition and argued that it is “understanding without rationale” (p.23), formed by expertise and relying on quick and unconscious clinical observation: a form of expert knowledge [31]. They mostly received criticism for their seeming unwillingness to dissect the concept, which Pellegrino (1979) argued is a ‘moral responsibility’ (p.187) [32]. Lamond and Thompson (2000) agree and state that patients have the right to know how their diagnosis is made and that doctors should be able to legitimize their decisions. In their article, they acknowledge the difficulty of the complex and

“messy” problems that nurses encounter and the use of intuition in those cases. They argue that decision-making should become more systematic and transparent [33].

Later articles have answered this call for transparency, by attempting to disentangle intuition. Welsh and Lyons (2001) state that intuition has a basis in formal and tacit knowledge. Tacit knowledge is seen as implicit knowledge that is obtained by experience in the field, while formal knowledge is the knowledge gained by training and education. They aim to demystify the concept by arguing that experienced health professionals gain a quick and holistic overview of the situation and its signals [34]. In line with this definition, Dutch general practitioner and researcher Stolper (2009 & 2011) has defined the mystical element of intuition as the bodily sensation of ‘gut feeling’. It is one’s gut giving a warning or judgement of a patient’s situation, even while evidence lacks and forming a rational conclusion is not possible [35, 36]. Stolper (2011 & 2013) studied gut feeling in general practitioners and found that gut feeling derives from both the doctor’s contextual knowledge of the patient and the doctor’s medical knowledge, linking gut feeling to expertise [35, 37]. Sadler-Smith (2008), argues that intuition as expertise does not cover the concept and the friction it brings in practice. He suggests that intuition should be defined as: “An involuntary, difficult-to-articulate, affect-laden recognition or judgement, based upon prior learning and experiences, which is arrived at rapidly, through holistic associations and without deliberative or conscious rational thought” (p.31), a definition more closely linked to intuition as a mode of thought [15].

Recent studies have started to disentangle intuition further. Instead of focussing on defining the concept, they concentrate more on the different elements of intuition and the characteristics of its users. Ruzsa, Szeverenyi and Varga (2020) studied healthcare professionals in different medical specialities and conducted surveys to see whether person- or job-specific factors contributed to their use of intuition. They concluded that high emergency, complexity and responsibility led to more use of intuition. They also found that experienced professionals used intuition more than their novice colleagues [25], while other studies found no link between experience and use of intuition [24, 38]. All studies describe the need for a better understanding of intuition and factors or characteristics it is influenced by.

In short, the debate on intuition went through several phases: first, there was a need for acknowledgement of intuition, after which there was a focus on disentangling the concept and to compare it to other ways of thinking. Thirdly, there has been a focus on creating a better understanding of what it is influenced by and who uses it. Most recently, there has been a call for a better understanding of how intuition is used. In this article, we focus on the latter and follow the line of Sadler-Smith (2016) in trying to understand intuition as a practice. We argue that intuition can be seen as a ‘knowledge practice’ in which knowledge is created, aligned and weighted [15, 21]. By shifting the focus to practices, we can start exploring how intuition is being used in highly complex situations.

Methods

As previous studies on the topic are limited, an exploratory sequential mixed-methods design was deemed appropriate [39]. First, qualitative in-depth material was gathered through interviews with CYHC-

practitioners. The interviews were coded through an iterative open coding process, form which three main themes emerged. These themes were used to create an exploratory survey, which was sent out to collect supportive quantitative data amongst other CYHC-professionals (nurses, assistants and other CYHC-practitioners). This allowed insights in the recognition and use of intuition amongst other CYHC-professionals.

Qualitative data

The qualitative material consisted of fourteen semi-structured interviews with CYHC-practitioners in the Netherlands, conducted between May and July 2017.

Participant recruitment and data collection tool

Interviewees were recruited through emails sent to different CYHC-practices in the Netherlands. After the initial email contact, potential respondents were phoned to arrange the interview. The interview guide was tested in several pilot interviews. The interview guide had three themes: after an introduction, participants were asked to express their associations with 'intuition' in relation to their work[1], which was followed by questions on their definitions and use of it and whether they could recall a case in which they used it. Secondly, they were asked about their experience with cases of (suspected) child abuse and the guidelines and instruments available to support them. Lastly, they were asked about the use of intuition in relation to these guidelines and instruments and their decision-making processes. An iterative approach to interviewing was used, which allowed new themes to occur and enabled member-checking. In order to increase the amount of available data and further strengthen the methodological design, interviews were collected by two interviewers[2]. All interviews were conducted in Dutch.

On average, interviews lasted 1.5 hours. Most interviews took place in the offices, meeting rooms or consultation rooms in CYHC-practices, with two exceptions: one interview took place at the home of the interviewee and the other in a cafe. The interviewees worked at CYHC-practices throughout the country and their work experience within the CYHC-system ranged between six and thirty-seven years. Twelve of the interviewees were working as a CYHC-practitioner, one as a nurse and policy advisor for child abuse issues and one as an assistant of a CYHC-practitioner. Four interviewees were male and the remaining ten were female. Data collection was finalised after saturation was reached and no new themes or information emerged in several interviews.

Data analysis

The recordings of the interviews were transcribed verbatim. In order to ensure member-checking, all transcriptions were summarized and both the full verbatim transcription and the summary were sent to the informants for comments and feedback. None of the informants asked to make changes. When the project ended, all participants received a summary of the findings, which allowed for another round of member-checking. Some participants asked questions based on the summary, which were used to clarify the result section.

The transcriptions and field notes of the interviews were analysed through Braun and Clarke's thematic analysis (2006), using ATLAS.ti 7.5.18: firstly, all material was read through to gain an overview of the material, secondly, each transcript was coded through open coding. Thirdly, all codes were checked for overlap and nuances, after which they were grouped into themes. This was an iterative process performed by JE, which was discussed within the research team until consensus was reached [40]. The major themes in both interviews and the survey are used to present the data in the results section, namely: 1) possible definitions of intuition in decision-making in the CYHC-system, 2) attitudes of CYHC-professionals towards it and 3) the way in which CYHC-practitioners use intuition in cases of child abuse[3]. These themes formed the basis of the survey.

Quantitative data

The quantitative data was collected through a web-based exploratory survey using Qualtrics XM, focusing on the recognition, use of and attitudes towards intuition of Dutch CYHC-professionals.

Data collection tool

After deliberation with interviewees and the research team and based on the validated translations of existing surveys on the topic in Dutch and English [37, 41, 42] it was decided that 'gut feeling' would be used in the survey, but that its definition would include elements of other terms and mention intuition: *'Gut feeling is the intuitive feeling that something is right or wrong, without any obvious reasons for it being found (directly)'*.

The self-administered survey consisted of several elements. Firstly, an introduction into the study and the topic was given followed by general demographic information. Next, each respondent was asked whether they recognise gut feeling in their job as a CYHC-professional. If the respondent stated that did not recognise it, they were directed to seven Likert-scale questions focused on the recognition of gut feeling. If the respondent did recognise it, their set of eleven questions focused on the use of attitudes towards gut feeling, asking about trusting in their gut feeling, subjectivity of gut feeling and whether they trust colleagues who use it[4].

The survey was tested in three rounds. Firstly, on students of the masters Global Health and of Statistics for Behavioural Sciences, then on members of the research team and lastly, on ten CYHC-practitioners. The survey was revised and adapted after each testing round.

Sampling and data analysis

Included in the survey were CYHC-professionals who were registered in the Dutch BIG register and who are fluent in either Dutch or English. There were no criteria on years of experience in the field, but it was necessary for participants to have had experience with suspected cases of child abuse and neglect. A link to the survey and an elaborate information letter were sent to all Dutch CYHC-practices via email. Data was collected between June and July 2017.

In total, 339 Dutch CYHC-professionals accessed the survey. Ten respondents did not fill in any questions and were not included in the final dataset, which consists of 329 responses. The percentage of missing data in the total dataset was 2.09%. It was under 5% for each variable and found to be random through Little's MCAR test. Most of the respondents were female (93%) and working as a nurse (59.6%) (n= 329). Their years of experience ranged from 0 to 40 years (n=303, mean=14.96, standard deviation=10.2), of whom 78.9% had over 5 years of experience. An overview of the characteristics of the survey participants can be found in Table 1. The data was analysed using SPSS version 26.

Reliability and validity

To explore the factorial structure of intuition/gut feeling amongst CYHC-professionals, nine items were subjected to an exploratory factor analysis with orthogonal varimax rotation. These nine items form the Likert scale questions for respondents who recognise intuition/gut feeling, the set of questions for participants who did not recognise intuition/gut feeling did not generate enough responses to be tested (n=5). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for analysis (KMO=.748). The Bartlett's Test of Sphericity was tested resulting in Chi-Square value 828,359, p=.000 and was therefore deemed acceptable for factor analysis. This resulted in two factors accounting for 56, 7% of variance: 'Attitudes' and 'Use'. The factor *Attitudes* was comprised of four items reported on a five-point Likert scale that explained 33.3% of the variance, with factor loadings from .746 to .815, using a cut-off point of .40 and Eigenvalues over 1. Internal consistency was tested with Cronbach's Alpha, resulting in α=.772, reflecting good reliability. The factor *Use* consisted of five items reported on a five-point Likert scale, which explained 24.3% of the variance. Factor loadings ranged from .603 to .766. Cronbach's Alpha was α=.765, again reflecting good reliability.

Results

From the analysis of qualitative data, three main themes emerged, which formed the basis of the quantitative data collection and the order in which the results will be presented: 1) the recognition and possible definitions of intuition in decision-making in the CYHC-system, 2) attitudes of CYHC-professionals towards intuition and 3) different ways in which CYHC-practitioners use intuition in cases of child abuse. The outcomes of both data collection processes will be presented in an integrated manner.

Recognition and definitions of intuition

The results of both types of data collection suggest a high recognition rate of intuitive feelings by CYHC-professionals: all interviewees and 96.7% (n=329) of survey participants stated that they recognise and experience this intuition or gut feeling in their daily work, of whom 48% stated that they experience it 'sometimes' and 30.1% experiences it 'often' (n=326). All interviewees recognised and experienced intuitive feelings:

Yes, [I recognise intuition] in the sense that you try to make an assessment of a situation. And because of the questions you ask and the answers you get, you naturally get a bit of an idea on whether what you're told is correct, or not. And you can't always put your finger on it, so you call it intuition (CYHC-practitioner, 17 years of experience).

Even though they recognised intuition, the majority of interviewees struggled to give a definition to these feelings, suggesting that it is personal and influenced by experience:

I would describe intuition as a feeling with which you make decisions that are based on experience. So it may be something unconscious, but it is secretly something conscious and based on previous experiences (CYHC-practitioner, 35 years of experience).

The abovementioned quote links intuition to experience. Interviewees also linked intuition to implicit knowing, assessment of situations and decision-making processes:

Intuition sounds as if you are guessing or something, while I think that intuition plays an important role. I would prefer to describe it as a sort of sensitivity, rather than intuition. You pick up a lot of signs that give you a certain feeling (CYHC-practitioner, 15 years of experience).

Definitions and opinions on intuition differed, but most interviewees experience it as an uncontrollable feeling or sensation that occurs regularly and originates from the senses: "*I think that your intuition is always on, even when you don't want it to be. You see, hear and smell things and you form an image right away"(CYHC-practitioner, 32 years of experience*). All interviewees agreed that intuition stems from signs that they picked up, for example smells, verbal and non-verbal communication or the stories that they have been told by others in the network of a family.

Attitudes towards the use of intuition

As participants generally acknowledged the concept of intuition, the next step was to look at the attitudes towards intuition and intuitive decision-making. The survey measured these attitudes using Likert scales, of which the responses are summarized in figure 1. Respondents mainly considered it to be 'fairly useful (*nuttig*)' (49.8%, n=319), 'fairly difficult (*moeilijk*)' (39.9%, n=323, 'fairly good (*goed*)' (39.5%, n=319) and 'fairly pleasant (*prettig*)' (35, 8%, n=324). These responses show ambivalences towards intuition: it is experienced as useful, good, yet it is difficult and not everyone enjoys using it. This also became apparent in the interviews. Often, a question of intuition prompted an initial positive response, after which CYHC-practitioners expressed their concerns. All participants affirmed that steps need to be taken when intuition is sensed: *"Certainly, you are obliged to do something with [intuition], otherwise you are negligent. […] To me, that is the most important thing. Otherwise you ignore your duty of care. After all, I'm a doctor for a reason" (CYHC-practitioner, 25 years of experience*). When asked what action needs to be taken, they responded that they will look for facts, as mentioned in the guidelines:

What you try to do is to get rid of that gut feeling as quickly as possible, and replace that intuition with facts. Because my feeling says it's not quite right, but which questions should I ask to check that? […] Is

my intuition incorrect? So [intuition] is a bit like your compass in the conversation (CYHC-practitioner, 17 years of experience).

CYHC-practitioners thus aim to 'get rid' of intuition by checking it with facts and state that ignoring intuition would be negligent. When asked about these 'facts' and what they consist of, CYHC-practitioners mentioned that they are difficult to determine and to define. They stated that facts could be tangible elements such as a *"black eye or clothes that are too small" (CYHC-practitioner, 14 years of experience)*, but that 'facts' are often constructed when comparing narratives of the people involved in the (suspected) case, such as the family themselves, the children's teachers, trainers, GPs or other healthcare professionals who interact with the family on a regular basis. These people form the *"eyes and ears of the CYHC-practitioners" (CYHC-practitioner, 14 years of experience)* and can deliver input to test the factual soundness of intuition.

In working with intuition, *ignoring* it is thus seen as dangerous, but interviewees also stated that it is unsafe to blindly *trust* intuition, as it may lead to narrow-mindedness and missing signs. Survey respondents who did recognise gut feeling (n=318) were asked whether they felt that they can trust their gut feeling when making decisions, in which 'decisions' were defined *"the decision to plan a follow-up appointment, to wait or to discuss the case with a colleague".* Most respondents answered that they could (41.7%, n=314). One interviewee explained that blindly trusting intuition can lead to 'tunnel vision': focussing on one explanation of a situation, without taking other possibilities into account. According to the interviewee, this is dangerous as it may damage the relationship with parents, which could lead to misinterpretations and false accusations of child abuse, having major implications for both the families and practitioners involved.

That's what makes it [intuition] dangerous, if you are convinced it is neglect or abuse, well, see what happens to your body language: you'll only focus on proving that these parents are no good. For example, because of your approach, the parent will start stumbling, they will lean backwards and that only confirms your thoughts: something is wrong here. Once this happens, you'll never be able to have a good relationship with this parent anymore. (CYHC-practitioner, 32 years of experience).

CYHC-practitioners aim to avoid tunnel vision by discussing all their cases with peers, nurses and their assistants. To get a sense of the general perception on intuition in CYHC-practices, interviewees were asked whether they thought their colleagues use intuition, to which one replied that they *"hope they do:otherwise you won't be able to function" (CYHC-practitioner, 9 years of experience*). They explained that the focus on communication and 'social medicine' in the CYHC-system made the use of intuition vital:

I do think that CYHC-practitioners are more sensitive and more social than the average doctor or surgeon. It might be due to how your education raises you and what is allowed in your profession. We talk a lot about feelings and the personal lives of people, so it has a place in our profession. […] So generally speaking, we are more sensitive people (CYHC-practitioner, 15 years of experience).

Intuition is experienced as an integral element of the daily work of CYHC-practitioners, and not as a cause of friction with colleagues or guidelines. Even though, Dutch guidelines for CYHC-practitioners on child abuse discourage decisions based on intuition. When interviewees were asked whether they knew what the guidelines said about intuition, the majority stated that it was not mentioned, but they also stated that they did not regard the guidelines as a useful tool as it is seen as too lengthy and generalised for their specific cases. They explained that child abuse is complex and personal, which requires a subjective approach that they felt was not be captured in the current national guideline.

Using intuition

In order to explore the use of intuition, survey respondents who recognised intuition or gut feeling (n=318), were asked whether they are allowed and enabled to use intuition, to which 48.1% (n=314) responded affirmative. Knowing that feelings of intuition or gut feeling are experienced and used by CYHC-practitioners in their decision-making process in the case of (suspected) child abuse, the interviewees were asked how they use these feelings. It was found that intuition can arise in different stages of the decision-making process and interviewees mentioned five distinct levels of working with intuition in their daily work: 1) to sense that something is off, 2) to normalise deviant or uncommon behaviour, 3) to assess risk, 4) to weigh secondary information and 5) to communicate with parents or caretakers.

The first level of the use of intuition is to sense that 'something is off'. As one of the interviewees stated: *"If you are doing an examination, or look into their [the child's] development, even if they meet the criteria, there is something that makes me think: something is off. Even though they do just as well as the children who come before them and after them, still there is something that worries you. That's intuition" (CYHC-practitioner, 35 years of experience).* As mentioned by this informant, the source of concern can be unclear, but the sense of 'something being off' was often linked to intuition by informants.

Secondly, intuition is used to differentiate between 'normal' and 'abnormal', in which interviewees subdivided abnormality in 'abnormal cases that can be normalised' and 'dangerously abnormal cases'. Normalities and abnormalities become more challenging when CYHC-practitioners work with people with different backgrounds. When actors external to the family circle, such as school teachers, share their concerns about the well-being of a child, they communicate using their own norms and values, which can differ from those of the family. CYHC-practitioners juggle their own norms and values, those of society and the opinion that they are expected to have as a CYHC-practitioner:

Dealing with different cultures makes you act differently, whether they are refugees or not, or just people with different ways of behaving. I think norms and values are very important in our profession and sometimes you have to set them aside and not judge people. Communicating with refugees is more difficult, so then you'll have to trust your intuition even more (CYHC-practitioner, 9 years of experience).

When CYHC-practitioners deal with families with different ideas of normality, regardless of background, they have to make a decision on whether a situation is to be considered dangerous or risky for a child, or

not. When there are risk factors or dangerous elements in a family situation, CYHC-practitioners need to make decisions on next steps that need to be taken. This leads to the third use of intuition: the assessing of risks and the ability of the family to cope or solve problems. *"The role of intuition is: the moment I see a mother with a baby who cries a lot, I have to assess whether the mother is able to cope with this or not" (CYHC-practitioner, 37 years of experience).* CYHC-practitioners assess the urgency of a case, in order to decide what kind of care they have to arrange for a family. Interviewees stated that intuition is fast and useful in this process.

Fourthly, secondary information is weighed with the use of intuition. CYHC-practitioners do not only rely on information and signals provided by the child and their families, but also on information and narratives coming from others in the environment of the child, such as teachers, sport coaches or general practitioners. Based on their opinions and stories, CYHC-practitioners aim to construct a truthful image of the child's situation and decide whether it is considered to be harmful or not.

To solely make objective observations is very difficult, because we always interpret, we aren't objective. And if so, then you'll get some facts, some signs, and how will you measure those? I don't think you could do that without intuition. Or when you have to decide whether people tell the truth or not: if you have to judge someone on their words, you won't be able to do that without intuition (CYHC-practitioner, 32 years of experience).

CYHC-practitioners use intuition to sense which statements are truthful and to reconstruct a complete picture of the situation. As child abuse is often hidden and occurring behind closed doors, CYHC-practitioners rely on the information of others and consensus amongst those others on what is going on in the family. They gather information from the family members themselves, their files and the stories of the people who are working closely with the subjects. As one of the interviewees described, after sensing that there might be something wrong or that she feels like there is a risky situation, she will start gathering additional information, mainly by asking everyone involved more questions. She wants to ensure that there are no gaps in the information, or friction between different sides of the story, as they can be clues to something being wrong (CYHC-practitioner, 25 years of experience). When CYHC-practitioners realise that someone is not telling the (full) truth, or they find friction or different interpretations in the narratives of the people involved, this is seen as a sign to raise alarm. Within EBM, is it often assumed that uncertainty can be eliminated by gathering more information [27, 43, 44]. However, interviewees state that while gathering more information is their first response to uncertainty as well, the irregularities or uncertainties they find when triangulating narratives are embraced as evidence as well. CYHC-practitioners use their intuition to weigh the incoming information and to eliminate or embrace the uncertainty that follows.

Lastly, intuition is used to communicate with parents and to negotiate their ideas or solutions. Each family and each case of suspected child abuse is unique and CYHC-practitioners need to sense how they can work with the different actors involved. As communication is *"the only tool CYHC-practitioners have" (CYHC-practitioner, 32 years of experience)*, they need to know how to use it. Trainings are focused on

conversational techniques, but interviewees said that it is not only techniques, but that it is also necessary to 'feel' the situation in order to know what to do. Interviewees mentioned intuition as a means to sense this: *"That's also intuition, that you hear something that makes you think: wait, stop, I have to ask about that" (CYHC-practitioner, 35 years of experience).*

The interviews show that intuition plays an influential role within decision-making in cases of (suspected) child abuse. CYHC-practitioners use intuition to assess and judge a situation and to communicate their opinion with the family and colleagues. Intuition becomes a practice, rather than a feeling, through which CYHC-practitioners can find issues and discuss them with parents or carers of children. It helps them to identify, assess and communicate, allowing them to act upon signs earlier and discuss it appropriately with parents/carers. This is important, as early detection and discussion of problems saves both parents and children from harm or severe consequences.

Discussion

The results of this study show both the difficulty of using, articulating and utilising an abstract concept like intuition, as well as uniform agreement about its high potential for decision-making in the practice of child and youth health care. Whilst quantitative data shows that most practitioners do indeed recognise and use intuition, qualitative data articulates how intuition is conceptualised, understood and enacted amongst other things (knowledge, evidence) in practice. Interviewees and survey responses showed that intuition is, paradoxically, both seen as integral to carrying out duties legitimately and risks the legitimacy of practitioner actions.

Our findings reflect the results of similar studies and articles on informal knowledge practices in CYHC-professionals or social work [11, 14, 25] , such as Ruzsa, Szeverenyi and Varga (2020) who showed that situations with high levels of complexity, uncertainty or emergency, healthcare professionals are more likely to use intuition. CYHC-practitioners explained that they encounter complexity and uncertainty in all stages: the topic is sensitive, they lack sufficient time to thoroughly get to know a family and are forced to make moral decisions. According to Broadhurst et al. (2010) and Saltiel (2016), this explained why informal knowledge practices are inherent to social work, which is similar to work in the CYHC-system. Even though the guidelines ask for facts and evidence, CYHC-practitioners mainly work with narratives of the people involved. Within these conversations, they look for friction between the recollections or gaps in their knowledge on the family. Narratives, friction and gaps are then used as facts to support their case, which shows that also the 'evidence' and 'facts' used in the decision-making process are highly complex as well. CYHC-practitioners manage this multi-levelled complexity with intuition, allowing them to take fast, yet well-informed decisions [8, 45].

While our study suggests that there is a positive stance towards intuition, quantitative data displayed the multiple aspects of intuitive feelings, which provided an insight in its complexity: participants recognise it and find it useful to a certain degree, but they also experience it as a difficult feeling to deal with. There was a large variety of answers in some questions and the difficulty of creating questions that 'measure'

gut feeling illustrates the complexity of the concept. Interviewees noted the difficulties of using intuition and warned for its danger when not investigated or handled reflexively, this is a concern shared by Benner and Tanner (1987). This ambiguous stance towards intuition and call for reflexivity indicates that it can be a helpful practice in decision-making, but also highlights the need for guidance on how to use it and to avoid the pitfalls mentioned by interviewees.

The ambiguous stance towards intuition and call for reflexivity indicates that it can be a helpful practice in decision-making, but also highlights the need for guidance on how to use intuition as 'good care' [46] and to avoid the pitfalls mentioned by interviewees. Notions of 'good care' are starting to change and consequently there is a need to connect evidence-based approaches to reflexive practices that help find fitting solutions for individual problems [29, 44]. Within this new school of thought on good care, uncertainty is seen as inherent to clinical problems and encounters. An example on how this can be done can be found in an ethnographic study on integrating the process of diagnostic work in a guideline for problem behaviour in elderly care [44], in which the researchers shifted the focus of the guideline towards asking questions and enabling conversation and consensus amongst the different healthcare professionals involved in the care of a person. The guideline included a nine-question list that forced professionals to reflect, discuss and think outside the box. Their response to this new type of guideline was good, it assisted them in improving care for their patients. A similar style guideline could help CYHC-practitioners in avoiding tunnel vision when using intuition and guide them further in conversation and triangulation. When intuition would be supported as a practice in the CYHC-system and practitioners are taught how they can use it, it could contribute to earlier detection and prevention of child abuse cases.

Conclusion

This study aimed to understand how child and youth healthcare-practitioners perceive the role of intuition in their work and in relation to evidence-based medicine, in the case of child abuse. The findings show intuition is widely recognized and used amongst professionals in the field and that CYHC-practitioners view intuition as a practice that is inherently part of their role, in which formal knowledge, experience and personality are combined. Intuition is stated to be particularly useful in the highly complex area of child abuse, where signs and evidence are subtle and unique in each case. CYHC-practitioners use intuition on five distinct levels through which they navigate the complexities of suspected child abuse: to sense that something is off, to differentiate between 'normal' and 'abnormal', to assess risks, to weigh secondary information and to communicate with families. This shows that intuition is not opposite to nor on a spectrum with EBM, but that professionals practice both in order to provide and improve care for their clients. For guidelines, this means that they ought to not only aim to include different types of knowledges, but also to support reflection and how to practice intuition as good care. In order to do so, lessons can be taken from practice and the knowledge of practitioners on the ground. When intuition is acknowledged as a practice and CYHC-practitioners are supported its use through guidelines, chances of detecting child abuse early, can increase.

Declarations

Ethics approval and consent to participate

All participants read and signed the informed consent form, which explained their rights. Due to the peculiarities of the participants (physicians) and the absence of contact with any patient data, the study does not require ethical approval under Dutch legislation (Wet Medisch Onderzoek - WMO).

Consent for publication

Not applicable

Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study. The interviews collected are in Dutch, but can be provided upon written request. Additionally, upon written request, the data collected via survey can be made available as an SPSS file.

Competing interests

The authors declare that they have no competing interests.

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Author's contributions

The study was initiated by ES, but the approach used for research was shaped by JE and ES. JE conducted the interviews and performed primary data analysis. ES provided general research supervision and assisted with both qualitative and quantitative analysis and contributed to the manuscript writing. KS and TZJ were assisting with both the analysis and the writing of the article. All authors read and approved the final manuscript.

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Abbreviations

CYHC: Child and Youth Health Care

EBM: Evidence-Based Medicine

References

1. **Child maltreatment (child abuse)** [https://www.who.int/violence_injury_prevention/violence/child/en/]
2. Vink R, de Wolff, M., Broerse, A., Heerdink, N., van Sleuwen, B., Kamphuis, M.: **Richtlijn Kindermishandeling 2016**. In.: TNO; 2016.
3. Sigad LI, Beker G, Lev-Wiesel R, Eisikovits Z: **"Alone with our interpretations": Uncertainty in child abuse intervention among healthcare professionals**. *Children and Youth Services Review* 2019, **100**:206-213.
4. Broadley K: **Chapter 16 - Virtue Ethics and Good Professional Judgement in Child Protection**. In: *Child Abuse and Neglect.* edn. Edited by Bryce I, Robinson Y, Petherick W: Academic Press; 2019: 307-323.
5. Whittaker A: **How Do Child-Protection Practitioners Make Decisions in Real-Life Situations? Lessons from the Psychology of Decision Making**. *The British Journal of Social Work* 2018, **48**(7):1967-1984.
6. Brandt AM, Rozin P: **Morality and health**. New York: Routledge; 1997.
7. Haugaard JJ: **The challenge of defining child sexual abuse**. *American Psychologist* 2000, **55**(9):1036-1039.
8. Veltkamp G, Brown P: **The everyday risk work of Dutch child-healthcare professionals: inferring 'safe' and 'good' parenting through trust, as mediated by a lens of gender and class**. *Sociology of Health & Illness* 2017, **39**(8):1297-1313.
9. Ploeg JDvd, Groot Rd: **Kindermishandeling: een complex probleem**. Antwerpen ;: Garant; 2010.
10. **Wat doet de jeugdarts?** [https://ajnjeugdartsen.nl/de-jeugdarts/wat-doet-de-jeugdarts/]
11. Saltiel D: **Observing front line decision making in child protection**. *British Journal of Social Work* 2016, **46**(7):2104-2119.
12. Hopman M, De Winter M, Koops W: **The hidden curriculum of youth policy: a Dutch example**. *Youth & Society* 2014, **46**(3):360-378.
13. Helm D: **Can I Have A Word? Social Worker Interaction and Sense-Making**. *Child Abuse Review* 2017, **26**(5):388-398.
14. Broadhurst K, Hall C, Wastell D, White S, Pithouse A: **Risk, instrumentalism and the humane project in social work: Identifying the informal logics of risk management in children's statutory services**. *British Journal of Social Work* 2010, **40**(4):1046-1064.
15. Sadler-Smith E: **Inside Intuition**. Hoboken: Taylor and Francis; 2012.
16. Munro E: **Improving practice: Child protection as a systems problem**. *Children and Youth Services Review* 2005, **27**(4):375-391.
17. Gobet F, Chassy P: **Towards an alternative to Benner's theory of expert intuition in nursing: A discussion paper**. *International Journal of Nursing Studies* 2008, **45**(1):129-139.
18. Sadler-Smith E: **'What happens when you intuit?': Understanding human resource practitioners' subjective experience of intuition through a novel linguistic method**. *Human Relations* 2016, **69**(5):1069-1093.

19. Devaney J, Spratt T: **Child abuse as a complex and wicked problem: Reflecting on policy developments in the United Kingdom in working with children and families with multiple problems**. *Children and Youth Services Review* 2009, **31**(6):635-641.
20. Peckover S, Golding B: **Domestic abuse and safeguarding children: critical issues for multiagency work**. *Child abuse review* 2017, **26**(1):40-50.
21. Law J, Mol A: **Complexities : social studies of knowledge practices**. Durham: Duke University Press; 2006.
22. **Richtlijn: Kindermishandeling (2016): Totstandkoming van de richtlijn.** [https://www.ncj.nl/richtlijnen/alle-richtlijnen/richtlijn/?richtlijn=12&rlpag=1645]
23. RIVM Centrum Jeugdgezondheid: **Richtlijnen Jeugdgezondheidszorg. Procedures rond ontwikkeling, implementatie en onderhoud van richtlijnen jeugdgezondheidszorg. Nederlands Jeugdinstituut.** . In.; 2007.
24. Rosciano A, Lindell D, Bryer J, DiMarco M: **Nurse practitioners' use of intuition**. *The Journal for Nurse Practitioners* 2016, **12**(8):560-565.
25. Ruzsa G, Szeverenyi C, Varga K: **Person-and job-specific factors of intuitive decision-making in clinical practice: results of a sample survey among Hungarian physicians and nurses**. *Health Psychology and Behavioral Medicine* 2020, **8**(1):152-184.
26. Greenhalgh T, Howick J, Maskrey N: **Evidence based medicine: a movement in crisis?***BMJ : British Medical Journal* 2014, **348**.
27. Wieringa S, Dreesens D, Forland F, Hulshof C, Lukersmith S, Macbeth F, Shaw B, van Vliet A, Zuiderent-Jerak T: **Different knowledge, different styles of reasoning: a challenge for guideline development**. *BMJ evidence-based medicine* 2018, **23**(3):87-91.
28. Zuiderent-Jerak T, Forland F, Macbeth F: **Guidelines should reflect all knowledge, not just clinical trials**. *Bmj* 2012, **345**:e6702.
29. Elwyn G, Wieringa S, Greenhalgh T: **Clinical encounters in the post-guidelines era**. *BMJ* 2016, **353**.
30. Munro E: **Common errors of reasoning in child protection work**. *Child abuse & neglect* 1999, **23**(8):745-758.
31. BENNER P, TANNER C: **HOW EXPERT NURSES USE INTUITION**. *AJN The American Journal of Nursing* 1987, **87**(1):23-34.
32. Pellegrino E: **The anatomy of clinical judgments: Some notes on right reason and right action. In, HT. Engelhardt, Jr. et al**. *Clinical Judgment: A Critical Appraisal*.
33. Lamond D, Thompson C: **Intuition and Analysis in Decision Making and Choice**. *Journal of Nursing Scholarship* 2000, **32**(4):411-414.
34. Welsh I, M Lyons C: **Evidence-based care and the case for intuition and tacit knowledge in clinical assessment and decision making in mental health nursing practice: An empirical contribution to the debate**, vol. 8; 2001.

35. Stolper E, Van de Wiel M, Van Royen P, Van Bokhoven M, Van der Weijden T, Dinant GJ: **Gut feelings as a third track in general practitioners' diagnostic reasoning**. *J Gen Intern Med* 2011, **26**(2):197-203.
36. Stolper E, Van Royen P, Van de Wiel M, Van Bokhoven M, Houben P, Van der Weijden T, Dinant GJ: **Consensus on gut feelings in general practice**. *BMC Family Practice* 2009, **10**(1):66.
37. Stolper CF, Van de Wiel MW, De Vet HC, Rutten AL, Van Royen P, Van Bokhoven MA, Van der Weijden T, Dinant GJ: **Family physicians' diagnostic gut feelings are measurable: construct validation of a questionnaire**. *BMC family practice* 2013, **14**(1):1.
38. Smith A: **Measuring the use of intuition by registered nurses in clinical practice**. *Nursing Standard (through 2013)* 2007, **21**(47):35.
39. Creswell JW: **Research design : qualitative, quantitative, and mixed methods approaches**; 2014.
40. Braun V, Clarke V: **Using thematic analysis in psychology**. *Qualitative research in psychology* 2006, **3**(2):77-101.
41. Stolper E, Van Royen P, Dinant GJ: **The 'sense of alarm'('gut feeling') in clinical practice. A survey among European general practitioners on recognition and expression**. *The European journal of general practice* 2010, **16**(2):72-74.
42. Barais M, Hauswaldt J, Hausmann D, Czachowski S, Sowinska A, Van Royen P, Stolper E: **The linguistic validation of the gut feelings questionnaire in three European languages**. *BMC family practice* 2017, **18**(1):54.
43. Burgers JS, van Everdingen JJ: **Beyond the evidence in clinical guidelines**. *The Lancet* 2004, **364**(9432):392-393.
44. van Loon E, Zuiderent-Jerak T, Bal R: **Diagnostic work through evidence-based guidelines: avoiding gaps between development and implementation of a guideline for problem behaviour in elderly care**. *Science as Culture* 2014, **23**(2):153-176.
45. Zinn JO: **Heading into the unknown: Everyday strategies for managing risk and uncertainty**. *Health, risk & society* 2008, **10**(5):439-450.
46. Mol A: **The logic of care : health and the problem of patient choice**. London: Routledge; 2011.

Table

Table 1: Sample characteristics survey 'Decision-making process child and youth health care system'

Gender	%	n
Female	93	306
Male	6.1	20
Other	0.3	1
No answer	0.6	2
n=329		
Profession	**%**	**n**
CYHC-practitioner	30.4	100
Nurse	59.6	196
Assistant	6.7	22
Assistant specialised in infants	2.7	9
n=329		
Years of experience	**Number of years**	
Minimum	0	
Maximum	40	
Mean	14.96	
Standard deviation	10.20	
n=303		

Figures

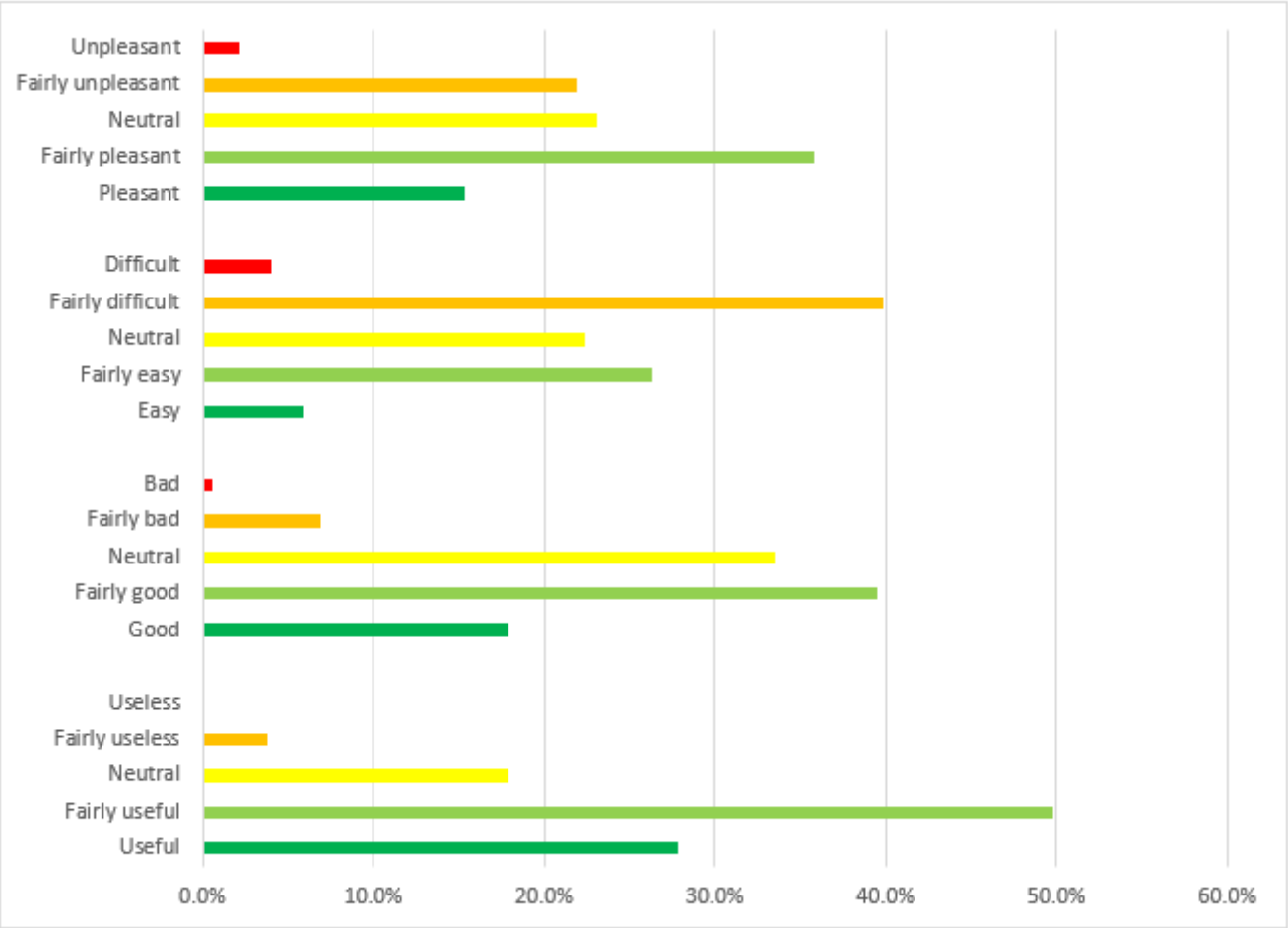

Figure 1

Survey responses regarding the use of gut feeling. n = 319

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Additionalfile1Overviewofcodes.docx.pdf
- Additionalfile2Surveyquestions.docx.pdf