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‘What Brings Him Here Today?’: Medical Problem Presentation Involving Children with Autism Spectrum Disorders and Typically Developing Children

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Abstract Conversation and discourse analyses were used to examine medical problem presentation in pediatric care. Healthcare visits involving children with ASD and typically developing children were analyzed. We examined how children’s communicative and epistemic capabilities, and their opportunities to be socialized into a competent patient role are interactionally achieved. We found that medical problem presentation is designed to contain a ‘pre-visit’ account of the interactional and epistemic work that children and caregivers carry out at home to identify the child’s health problems; and that the intersubjective accessibility of children’s experiences that becomes disrupted by ASD presents a dilemma to all participants in the visit. The article examines interactional roots of unmet healthcare needs and foregone medical care of people with ASD.

Keywords Autism spectrum disorders · Children · Conversation analysis · Discourse analysis · Healthcare encounters · Medical problem presentation · Unmet healthcare needs

Introduction

He (the doctor) did not engage with Alex, he engaged with me, but didn’t engage with Alex very much, so that’s a biggie. If they engage with Alex, like Doctor Taketa took the time, which is really important to me, he took the time and actually, “Alex, Alex,” or “What’s your name?”, and he’s like, “Alex!” He took the time to interact with him, where a lot of times the doctors are like, “What’s the problem?”, you know, “What’s going on?” Talk to him! See, engage him! He’ll say something to you, you may not understand it right away, but he’ll tell you something, which is really important because, I think, if any child—if you lower yourself to their eye level, they can relate to you.

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In this interview excerpt, Simone, Alex's mother, is reflecting on the different ways that two doctors interacted with her son during his recent healthcare visits. Diagnosed with Autistic Disorder (American Psychiatric Association 2000) just before he turned 2 years old, Alex is now eight and has little spoken language. Most doctors who see Alex rarely interact with him, but Alex's pediatrician, Dr. Taketa, who specializes in ASD, is an exception. In just a few words, Simone succinctly describes the interactional patterns that often characterize healthcare encounters of children with ASD (Solomon et al. in press).

Paradoxically, however, Simone's observations also describe the healthcare visits of most typically developing (TD) children. Research has consistently shown that TD children's talk constitutes a small percentage of all discourse that takes place during their visits because they are rarely selected as speakers (Cahill 2010; Stivers 2001, 2011; Stivers and Majid 2007). That percentage increases incrementally with age, ranging between 3 and 14 % (Cahill and Papageorgiou 2007; Stivers and Majid 2007; Bates and Meeuwesen 2000). It is the TD children's caregivers, mostly mothers, who are the primary informants about the child's symptoms and illness experiences (Cahill 2010; Stivers 2007; Bates and Meeuwesen 2001).

How and why does it matter, then, that a child with ASD is or is not engaged by the doctors? If TD children are often not expected to speak during their visits, how and why does it matter that a child with ASD is or is not expected to speak? These questions go to the core of the social construction of children's tacitly assigned 'rights' to participate in healthcare visits. They bring into focus the minute but powerful social processes that afford children opportunities to enact their communicative and epistemic competence, and to be socialized into the role of a competent patient (Heritage 2009b; Stivers 2001, 2011, 2012). For children with ASD, whether and how the doctors 'lower themselves to their eye level', as Simone says, by calling them by name, engaging them in greetings, and selecting them as speakers, subtly but powerfully projects the children as certain kinds of interactants, either potentially able or unable to participate in their healthcare visits (Heritage 1984; Searle 1969). It is this construction of Alex's personhood that Simone reflects on in the excerpt above, arguing that the doctors should interact with him as they would with 'any child'.

Understanding these dynamics is important for several reasons. While significant advances have been made in the scientific understanding of genetic, neuro-biological and cognitive processes underlying ASD symptomatology, little is known about the impact of socio-communicative and sensory impairments associated with ASD on the provision of healthcare (Accordino and Walkup 2015; Bauman 2010; Croen et al. 2015; Lajonchere et al. 2012; Solomon et al. in

press; Volkmar et al. 2014a, b). Equally unknown is how healthcare practices and contexts engender and problematize the manifestations of socio-communicative and behavioral challenges common in ASD (Lester and Paulus 2012).

Moreover, how doctors interact with TD children who have a chronic illness has been linked to parents' adherence to treatment and satisfaction with care (Swedlund et al. 2012). Parents of children with ASD also greatly value the rapport that professionals build with their child, but they explicitly insist on these professionals "knowing the child" before they provide treatment (Hodgetts et al. 2013, p. 144), which points to a distinction between knowing the child's diagnosis and healthcare needs, and knowing the child as a person (Solomon et al. in press). Our analysis will illustrate the investment that parents of children with ASD make in orchestrating seemingly trivial but consequential interactions between their child and the doctor, e.g. a greeting at the start of the visit.

Getting to know the healthcare needs of patients with ASD is, however, a complex process (Warfield et al. 2015). Many health problems, ranging from those known to be associated with ASD (Bauman 2010; Goldson and Bauman 2007; Volkmar and Weisner 2009), to idiosyncratic health problems (Accordino and Walkup 2015), and life-threatening conditions (Radcliff 2013; Smith et al. 2012) often remain undiagnosed in individuals with ASD (Siegel and Gabriels 2014). Over and above the challenges inherent in identification of medical problems in everyday clinical practice, the risks of foregone care and 'diagnostic overshadowing' (Reiss and Szyszko 1983) loom large for patients with ASD. Communication challenges that affect "reporting of internal symptoms" (Henry et al. 2014, p. 403) play a significant role in 'diagnostic overshadowing' experienced by children with ASD, and patients with ASD more generally (Levy and Perry 2011; Simonoff et al. 2008). The clinical encounter is in many ways the epicenter of healthcare, a site where the doctor, the parent and the child establish the parameters of the medical problem. Conceptualizing 'diagnostic overshadowing' in interactional terms makes it possible to ask: What are the interactional practices that constitute differential diagnosis-relevant communication? Which practices support or hinder this process? What are the tacit expectations regarding children's role as competent socio-medical participants who contribute to identifying their own medical problems, and how do these expectations become visible during healthcare visits of children with ASD?

To address these questions, we utilize two distinct qualitative approaches, conversation analysis (CA) and discourse analysis (DA). We describe how TD children and their parents corroborate in identification and description of the children's symptoms, and draw a contrast in how TD

children perform in their healthcare visits compared to children with ASD. Such a comparison is not a ‘matching’ of two groups of children. Rather, we show how what is called ‘autism’ becomes “visible symbolically and discursively, as bodies and minds are positioned as ordered or disordered in relation to able-bodied assumptions” (Lester and Paulus 2012, p. 261).

To this end, we use the CA and DA approaches in an integrated, ‘mixed methods’ perspective (Creswell et al. 2007). We use CA to identify and contrast patterns of the participants’ *social behavior*, i.e. the conversational turn-taking and the sequential organization of child–parent–doctor interaction related to medical problem presentation. Additionally, we use DA to contextualize medical problem presentation in “the lifeworld” (Mishler 1984, p. 104) of the parents and the doctors by capturing their narrated experiences—what is sometimes called ‘self-report’—as exemplified by Simone’s excerpt above. Our approach is especially well-suited for uncovering the interactional roots of foregone medical care for children with ASD: it reveals both “what is done” in child–parent–doctor interactions, and “how it is achieved” (Halkowski and Gill 2010, p. 213; Maynard and Heritage 2005; Heritage 2009a, b). The approach also reveals the particular interactional quandaries—e.g. diminished accessibility of children’s illness experiences—that constitute ASD as a problem for all the participants in the visit (Solomon et al. in press).

First, we examine how at the very start of the visit the doctors and the parents attribute to the children certain epistemic and experiential ‘rights’ related to their illness experiences (Stivers 2001, 2011), and how the children accept, claim, reject or overlook these ‘rights’. Second, we juxtapose and compare medical problem presentations during TD children’s visits and visits of children with ASD, with an eye for practices that instantiate the intersubjective accessibility of the children’s illness experiences in the time leading to the visit, and during the visit itself. We describe how, usually at the very start of the visit, the mothers and their TD children produce a shared, mutually ratified account of the interactional and epistemic work that they have been carrying out at home to identify and evaluate the nature of the child’s health problems. The account of this “pre-visit” work often legitimizes the reason for the visit (Heritage 2009b).

We show that it is through these interactional processes that children are constituted, at least provisionally, as competent socio-medical participants, accountable and able to self-reflectively register, remember and describe their symptoms to their caregivers at home and to their doctors during the medical problem presentation. The goal of this article is to identify communication patterns that characterize how TD children’s health problems are described during the visits, and how interactional challenges inherent

in ASD both influence and are engendered by such interactions (Lester and Paulus 2012).

Methods

Similar to most healthcare research, studies on healthcare of children with ASD in the U.S. have traditionally used large-scale, macro-level approaches (e.g. Kogan et al. 2008), making little connection between population-level findings, and the micro-level interactional processes that may contribute to them (Cicourel 2011). These studies reveal a contradictory picture: compared to other pediatric populations, children with ASD have increased unmet healthcare needs in spite of increased healthcare utilization (Bethell et al. 2014). Liptak et al. (2006) report that children with ASD in their study averaged outpatient visits that were twice as long compared to other children’s (31.9 vs. 15.8 min). They also had significantly more outpatient visits (41.5 vs. 3.3) and physician visits (8.0 vs. 2.2) (Liptak et al. 2006, p. 876). Children with ASD in Croen et al.’s (2006) study were hospitalized at a higher rate, were nearly 9 times more likely to use psychotherapeutic medications, and twice as likely to use gastrointestinal agents than children without ASD. Their mean annual cost of healthcare per child was found to be more than three times higher than for children without ASD (Croen et al. 2006). On the other hand, children with ASD experience greater unmet healthcare needs and face significant disparities in receiving comprehensive, coordinated primary and specialty care, compared to children with other conditions (Chiri and Warfield 2012; Newacheck and Kim 2005; Tregnago and Cheak-Zamora 2012).

Our methodological approach identifies micro-level interactional processes that may be contributing to this complex picture (Cicourel 2011). Informed by the pediatric neurology (Bauman 2010; Bauman and Kemper 2005; Goldson and Bauman 2007) and developmental and behavioral pediatrics perspectives (Yin et al. 2013), our approach provides an understanding of child–parent–doctor interaction that has both applied and theoretical value for autism research. To better illustrate the analytic rigor of this approach, we briefly outline conceptual foundations and research applications of CA and DA.

Conversation Analysis

CA’s focus on the use of language to accomplish social actions (Atkinson and Heritage 1984; Schegloff 2007) has turned it into a robust methodology for the analysis of medical encounters (Heritage and Maynard 2006a, b). Researchers studying social interaction in medical contexts have used CA to examine the overall structure of

healthcare visits, the specific activities within the visits (e.g. problem presentation, treatment phase), the turn sequences in the visit (e.g. greetings, opening questions), or the design of the turns themselves (e.g. turn construction practices) (Heritage 2009a, b, 2011, 2012; Heritage and Robinson 2006; Robinson 2003, 2006; Robinson and Heritage 2005). CA has been used extensively to examine recurrent patterns of child–parent–doctor interactions during healthcare visits (e.g. Stivers 2007, 2011).

Recent years have witnessed a considerable extension both of the CA methods and of their application to domains of medicine. Research on gaze, body movement, spatial alignments and medical instrumentation has elaborated CA into a *multi-modal* approach and has extended its reach into fields such as surgery (Hudak et al. 2011; Mondada 2011), anesthesiology (Hindmarsh and Pilnick 2007), dentistry (Hindmarsh et al. 2011), and the uses of imaging technologies (Nishizaka 2013). CA methods have also been applied to medical specialties such as cancer (Beach and Anderson 2003), autoimmune deficiency syndrome (Peräkylä and Bor 1990), orthopedics (Hudak and Maynard 2011; Maynard and Hudak 2008), pediatric pain management (Clemente 2009; Clemente et al. 2008), and a variety of aspects of childbirth (Kitzinger 2011). CA has also been used in studies of sensitive medical care topics such as future illness progression and end of life (Parry et al. 2014).

The quantitative extensions of CA have generated significant advances in the statistical modeling of outcomes of interactional practices, for example, determining the influence of question design on patient responses (Heritage and Robinson 2006; Robinson and Heritage 2005, 2006; Heritage et al. 2007), the significance of physicians' opening remarks introducing vaccinations for parental adherence to the recommended vaccination regime (Opel et al. 2013), and how the effectiveness of clinicians' recommendations against antibiotics is shaped by other characteristics of communication during the medical visit (Mangione-Smith et al. 2006). These advances have led to the notion of a 'conversation analytic intervention' that captures the role of CA in intervention research (Robinson and Heritage 2014). In addition, CA has been effectively used for diagnostic purposes, e.g. in the development of diagnostic techniques to distinguish between patients who have suffered epileptic seizures from those who have not (Plug and Reuber 2009; Schwabe et al. 2007), and between patients experiencing dementia from those with other forms of memory loss (Jones et al. 2015).

CA has been used widely in research on various interactional aspects of autism (Dickerson et al. 2007; Korkiakangas et al. 2012; Marlaire and Maynard 1990; Maynard 2005; Maynard and Marlaire 1992; Muskett et al. 2010;

Sterponi and Fasulo 2010; Stribling et al. 2007; Turowetz 2015), as well as schizophrenia (McCabe 2009), aphasia (Goodwin 2003; Wilkinson et al. 2007) and learning disabilities (Antaki and Wilkinson 2012).

Discourse Analysis

DA builds a wider analytic frame than does CA to understand interactional sequences by reaching beyond the 'here and now' of social interactions to enrich a sense of their context and to examine the circumstances and the sentiments that inform them. DA usually employs ethnographic and interpretive methodology that has been used in several branches of linguistics, and in psychology, sociology, anthropology, and education research (Schiffrin et al. 2001; Tannen et al. 2015).

The DA's applications in medicine have been growing steadily in the past decades (Jones 2015). DA has been used in medical anthropology to elucidate the meanings, experiences, sensibilities and dilemmas that reside below the surface of people's talk during medical visits (Mishler 1984; Strong 1979; Todd and Fisher 1993). Its application by physician–scholars such as Waitzkin (1993) and Charon (2001) has transformed the everyday practice of medicine.

The first application of DA to the study of autism in the U.S. was carried out on the 'UCLA's Ethnography of Autism' project founded by clinical psychologist Lisa Capps (Losh and Capps 2003, 2006) and linguistic anthropologist Elinor Ochs, following their collaboration on family discourse and agoraphobia (Capps and Ochs 1995a, b; Ochs 2002, 2015; Ochs and Solomon 2010; Ochs et al. 2004, 2005). It also has been used in a longitudinal mixed methods study 'Autism in Urban Context' for which data analyzed in this article were collected, that examines disparities in ASD diagnosis, interventions and services experienced by African American children with ASD and their families (Angell and Solomon 2014; Solomon and Lawlor 2013; Solomon et al. in press). Furthermore, DA has been widely used in research on social interactions and experiences of people with other conditions such as Alzheimer's disease (Hamilton 1994) and traumatic brain injury (Coelho 1999).

In summary, in this article we use a mixed methods CA and DA approach to begin bridging macro- and micro-level processes in the study of medical problem presentation of children with ASD to better understand the causes of 'diagnostic overshadowing' and foregone care (Bauman 2010; Siegel and Gabriels 2014). Such a methodology is especially useful for the study of issues relevant to families of children with ASD and healthcare providers who serve them, and has a strong potential for developing empirically-grounded recommendations for clinical practice.

Recruitment, Sample and Data

The *TD children's data* were collected for a pilot study on acute primary care visits. A total of seventy children's visits with five pediatricians were video-recorded. The children were recruited through the pediatricians' referral and were of elementary school age, predominantly white and middle class, and all lived in Southern California. The cases presented in the article are intended to be illustrative of the identified contrasts with the ASD cases rather than representative of the corpus itself, or of subsequent corpora that were collected, which has been done elsewhere (e.g. Stivers 2007; Mangione-Smith et al. 2006).

The healthcare visits of children with ASD were collected as part of an ethnographic, mixed methods study on African American families' experiences of ASD diagnosis, interventions and services in Southern California (R01 MH089474, 2009–2012, O. Solomon, P.I.). A detailed description of the study can be found in Solomon and Lawlor (2013) and Solomon et al. (in press). The participants were recruited through four California Department of Developmental Disabilities regional centers, a children's hospital, and a University Center for Excellence in Developmental Disabilities. Twenty-three families with a total of 25 children, 22 boys and 3 girls with ASD (American Psychiatric Association 2000) participated in the study. The children were between 4 and 11 years old during data collection. For this article, we analyzed a sub-corpus of 16 healthcare visits involving four children with ASD, four mothers and two fathers; and seven physicians: two pediatricians, one family practitioner, and four specialists. We also analyzed 12 interviews with the mothers and 4 interviews with the doctors about their experiences during the visits and other related topics (Solomon et al. in press).

Data Analysis

CA was conducted through moment-by-moment analysis of video and transcripts that used CA conventions (Jefferson 2004). We identified communicative patterns that are so recurrent they can be defined as 'practices', designed to project a predictable range of responses. Collections of these practices were compiled to establish the range of interactional strategies used by the participants. Similar to CA, DA was conducted through multiple viewings and the moment-by-moment analysis of transcribed video- or audio-recorded interactions, but the analysis was focused on the participants' perspectives and meanings. Beyond an utterance-by-utterance analysis of single interactions, DA was used to identify themes present within and across the data sample (e.g. Angell and Solomon 2014; Solomon 2004; Solomon and Lawlor 2013; Solomon et al. in press).

Results

Greeting Sequences and Speaker Selection in Problem Presentation Initiations

As a socio-cultural practice, greetings establish the conditions for a social encounter (Duranti 1997). They function as an acknowledgement of the other's presence (Searle 1969; Schegloff 1979, 1986), while also marking him or her as a "distinct being worth recognizing" (Duranti 1997, p. 67). People use greetings to acknowledge and quickly negotiate 'who is who to whom'.

In healthcare, patient-provider greetings mark the start of the visit (Robinson 1998), and are critical in establishing rapport and making patients and their family members feel comfortable (Amer and Fisher 2009; Makoul et al. 2007). Following the greetings, the provider ordinarily initiates the problem presentation (Robinson 2006, Heritage and Maynard 2006a, b) by asking a question, often accompanied by eye gaze and body orientation, that selects the next speaker who could be the child (O:kay:. Irene:. What's up.), the mother (What brings him here today?) or ambiguously both the child and the mother (How are we doing?) (Stivers 2001). An anticipated response to these questions is an account of the child's health problems that, in a predictable fashion, may be provided by the child, the mother, or both. The predictable nature of such opening sequences—a greeting followed by speaker selection to initiate the problem presentation—is founded in the mutual orientation of the participants to identifying and addressing the child's health problems and needs (Pilnick et al. 2009).

Speaker selection indexes the epistemic and interactional 'rights' to telling about the problem (Heritage 2011, 2012). Consider the brevity and effortlessness of the following greeting sequence, and the seamless transition to a problem presentation (Jefferson 1989) in which the doctor selects the child as the next speaker. The initiations of problem presentation are marked with an arrow (→).

Opening 1: TD Child

- | | |
|----|--|
| 1 | (door opens) |
| 2 | Doctor Hello:. |
| 3 | Mother [Hi:. |
| 4 | Irene [Hi. |
| 5 | (0.5) |
| 6 | (door closes)/(1.0) |
| →7 | Doctor O:kay:. Irene:. What's up. ((while walking in)) |
| 8 | Irene .Mlkh |
| 9 | (0.2) ((Doctor is looking down at records)) |
| 10 | Doctor (.) ((Looks up at Irene)) |
| 11 | Irene (My swell-) my throat hurts an' yesterday |
| 12 | I was sick cuz I had uh high fever |

Video analysis of this opening sequence shows that the doctor's 'hello' in line 2, uttered while he is entering the room, is not specifically addressed to either the patient, Irene, or her mother by his gaze or in any other way. Both the mother and the child answer 'Hi' (overlapping lines 3 and 4). In line 7, the doctor then projects the next stage of the visit (O:kay:.), calls the child by

name (Irene:) and selects her as the next speaker in the problem presentation sequence (What's up). As soon as the doctor looks up at Irene from the medical chart, she responds with a beginning of 'pre-visit' account of her health problems in lines 11 and 12.

A similarly straightforward acknowledgement of a TD child's identity and 'rights' to tell what problem brought her to the doctor's office can be seen in the example below:

Opening 2: TD Child

- 1 Doctor Well how're you doing Chelsea?
 2 Chelsea Fine.
 3 Doctor Well good. Well if you're fine, I guess I'll see ya later.
 4 Mother .hh Uh heh heh heh heh
 →5 Doctor Ah: So: something's cooking huh?

In this excerpt, the doctor's greeting in line 1 is also an initiation of problem presentation directed to the child who responds to it as if it were a conventional 'how are you' (Robinson 1998, 2006). In response to Chelsea's 'Fine', the doctor jokingly threatens to leave in line 3 (I guess I'll see ya later.), before transitioning into the beginning of problem presentation with (So: something's cooking huh?) in line 5.

In our final example of an opening sequence involving a TD child, we see the doctor engaging the patient by calling her by name and asking her age (line 1).

Opening 3: TD child

- 1 Doctor .hh Uhm: how old are you Alexandra?
 2 Child Seven?
 3 Doctor S:even:?, ((very dramatically)) (Well that) pretty
 4 go to:d.
 5 (0.2)
 6 Doctor Didju do that all by yourself?
 7 (.)
 8 Doctor Get to sev(h)en all by yourself?
 9 Child Mm hm,
 10 Doctor (W(h)o(h):w(h):)
 11 Mother [(Heh:: hmh hmh hmh hmh hmh [hmh])
 →12 Doctor [hhh O:kay. What
 →13 can we do for you today.)/(,)
 14 (3.0)
 15 Doctor [Oh! we're- you're fine t' day huh?
 16 Child [(Uhm:.)
 17 (0.2)
 18 Child I- have uh- my throat [is hurtin'g?
 19 Doctor [hhhh [O:h No^:.
 20 Child And I have s:- uh blister? in my mouth?
 21 Doctor Oh^: No^: hh
 22 (.)
 23 Doctor Wow when did all this happen.
 24 Child An' my s:- I have uh stuffy nose.
 25 Doctor And uh stuffy nose. So sounds like you've been
 26 sick over thuh last day er so.(Is)/(Has) it
 27 been going on for more than uh couple days? er
 28 Mother Mm:- (.
 29 Doctor [Through thuh weekend,
 30 Mother [Through thuh weekend.

Playfully building on this opening, the doctor goes on to invite Alexandra to present the reason for her visit, finally transitioning to address her mother ((Is)/(Has) it been going on for more than uh couple days? er) in lines 26 and 27 about the onset of the symptoms—a typical transition for a child of this age (Stivers 2007).

As exemplified by these segments, the greeting sequences in TD children's visits data are characterized by seamless turn-taking (Hello:: Hi. Hi) accomplished without significant delay (Jefferson 1989; Sacks et al. 1974). These greeting sequences

are a site where a provisional agreement is established by the participants on 'who is who to whom', including an evaluation of what kind of an interactant the child is. This momentary evaluation of the child's personhood evinced by how he or she participates in the greeting sequence, gives the doctor a basis for making interactional choices regarding how much to engage the child as a speaker in the problem presentation.

The seamless nature of TD child-parent-doctor interactions is often conveyed through metaphors of 'social choreography' and 'dance of three partners' (Aronsson and Rindstedt 2011; Clemente 2009; Gabe et al. 2004; Tates et al. 2002). By contrast, our analysis of greeting sequences in visits of children with ASD reveals that even such a seemingly simple sequence may become a difficult to accomplish interactional achievement that takes many more turns and a much longer time to carry out than the greetings in the TD children's data. Moreover, establishing 'who is who to whom' and positioning the child with ASD as a certain kind of a participant in the visit takes more interactional work, as we show below.

Consider the following interaction when Jacob, a 9-year old boy who has been diagnosed with ASD, and his mother came to see their family physician, Dr. Green, for a routine check up and to get help with Jacob's allergies. Similar to example 1, the doctor says 'hello' as she is coming through the door (line 7). In this case, however, neither the mother who is on the cell phone, nor the child responds.

Opening 4: Child with ASD

- 1 Jacob ((sitting by the door in the doctor's office, looks
 2 under the table and then at something in front of him))
 3 Mother ((talking on the cell phone))
 4 Doctor ((appears in the doorway and takes Jacob's medical record
 5 from the shelf outside the door, glances at the mother
 6 and then at Jacob as she walks in))
 7 ((sing-song intonation)) He↑-lo:..
 8 Mother ((on the cell phone)) okay Stacy I'm gonna call you
 9 right back okay.
 10 (.
 11 [okay you have a nice weekend. (.) bye. bye.
 12 Jacob [(looks at the doctor, then looks away))
 13 Doctor ((closes the door behind her))
 14 ((glances down at the medical record))
 15 Uhm - Ja:cob,
 16 ((walks by Jacob to the back of the room))
 17 (.
 18 Doctor Jacob,
 19 (.
 20 ((several lines omitted, the doctor gives the researcher
 21 directions where to sit))
 22 Doctor Mom. (.) you can sit right th[ere ((points to a chair))
 23 Mother [okay
 24 Doctor Ja:::cob,
 25 Mother °Jacob° [((walks to the chair pointed by the doctor and sits down))
 26 Jacob [(follows mother's movement, facing mother, sideways
 27 to the doctor))
 28 Doctor Jacob, (° °)
 29 Mother Ja:::cob,
 30 Jacob ((faces the mother, his back to the doctor))
 31 Doctor Ja:cob,
 32 Jacob ((turns to the doctor))
 33 Doctor ((smiles at Jacob))
 34 ((sing-song intonation)) Hi↑ [How a:re you?
 35 Mother [Say hi .
 36 Jacob Hi.
 37 Doctor D'you think you can >get up on th' table over here.<
 38 Jacob No:. ((sits in mother's lap))
 39 Doctor No?

Subsequently to her initial ‘hello’ in line 7, the doctor elicits attentional engagement from Jacob by repeating his name five times (line 15, 18, 24, 28, 31). After Jacob turns to the doctor in line 32, she renews her greeting (line 34) and Jacob responds (Hi.) in line 36 after being prompted to do so by his mother in line 35. A total of 19 s elapses between the doctor’s first ‘He↑l-lo:’ and Jacob’s response in line 36. The doctor’s next turn is to ask Jacob to sit on the exam table, to get him in position for a physical examination (line 37), which Jacob declines in line 38, getting into his mother’s lap instead.

The attentional management of opening sequences may be more challenging for a child with more significant ASD symptoms. Consider the opening sequence that was recorded during a visit that Alex, whose mother, Simone, was quoted in the beginning of this article, had with his pediatrician, Dr. Taketa. Alex’s spoken language is limited (Tager-Flusberg and Kasari 2013), and he is considered ‘nonverbal’ by most doctors who see him, but not by his mother. In the following segment, the opening sequence is accomplished over a 23 s period through a series of actions to coordinate Alex’s facial orientation, eye gaze and vocalizations into a reciprocal interaction with Dr. Taketa. The line drawings, created from video frames, show how Simone shapes Alex’s body into a normative posture indexing attention and social engagement (Solomon 2011). Noticeable here is the considerable amount of coordinated, joint effort by both the doctor and the mother oriented to the task of achieving an extended greeting between Alex and the doctor, despite the fact that Alex produced a prompted (lines 3 and 5), responsive ‘Hi,’ in line 7.

Opening 5: Child with ASD

- 1 Doctor ((enters the room))
- 2 Mother Hi↑ >Doctor Taketa?<
- 3 Doctor Hello: ((closes the door behind him))
- 3 Mother A↑lex. say hi↑↓:
- 4 Alex (1.5) ((sitting on the exam table, hums, rocks back and forth))
- 5 Mother Say hi↑↓:
- 6 Doctor ((looks at Alex and raises his hand in a greeting))
- 7 Alex Hi, ((Alex looks at Doctor Taketa))
- 8 (0.8)
- 9 ((Alex looks away))
- 10 Mother A↑lex.
- 11 (1.2)
- 12 Doctor ((Looking at Alex)) Hhh- how a:re you.
- 13 Alex (1.0) ((Looks in the direction of the camera, away from Doctor Taketa, see Figure 1))
- 14

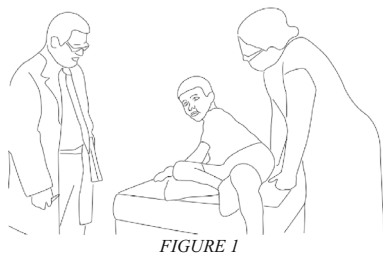


FIGURE 1

- 15 Mother ((To Alex)) Eye contact.
- 16 ((turns him by the chin so he faces Doctor Taketa, see Figure 2))

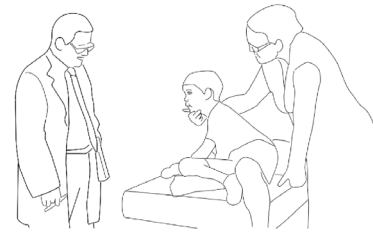


FIGURE 2

- 17 Alex (1.0) ((Looks at Doctor Taketa))
- 18 Doctor ((Leans down and looks at Alex, see Figure 3))
- 19 How are you.
- 20 (2.0)

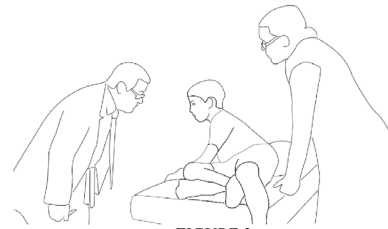


FIGURE 3

- 21 Doctor ((Touches the top of Alex’s head, see Figure 4))
- 22 “How are you.”

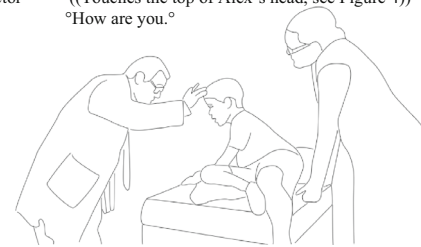


FIGURE 4

- (1.2)
- 23 Alex (((reaches out and touches Doctor Taketa’s hand, see Figure 5))
- 24 Mother: [Goo↑d
- 25 (0.3)
- 26 Doctor Okay?
- 27 (0.8)
- 28 Mother Say goo↑d,
- 29 Alex >Goo↑d,<

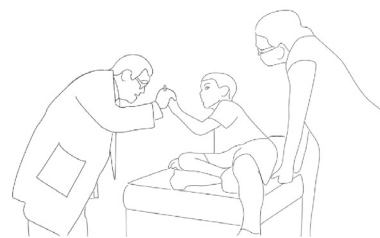


FIGURE 5

- 30 Doctor: ((laughs, lets go of Alex’s hand))
- 31 Mother: Yeah. (High pitched)
- 32 Doctor: Good jo:b. (smiling) O::kay.
- 33 ((To mother)) And how are you doing?
- 34 ((Problem presentation follows))

In this case, as the transcript shows, Dr. Taketa invests considerable effort in recognizing and engaging Alex as a co-interactant. Simone is also strongly invested in this

enterprise, as both the transcript and the article's opening quotation illustrate. In an ethnographic interview Dr. Taketa, who made ASD his practice specialty, reflected on his experiences (see also Solomon et al. in press): "*It's too easy to get frustrated and be dismissive of some of the difficult autistic children, because they're running around the office more, they may be more destructive, it's hard, very hard to do an exam, you don't know how far you're getting through.*" In spite of these difficulties, Dr. Taketa described children with ASD as intentional actors with rich subjectivity: "*They have the logic going on in their own brain. They're interpreting the world in a different way, they're speaking a different language, so the burden is upon me to understand them as much as it is for them to understand our world. No, it's not about decreased intelligence, it's a different world. That's what I keep in mind. That helps me*".

In this interview excerpt, Dr. Taketa explains how, for him, ASD has turned from a problem of impaired communication to a problem of "a different language" that he takes upon himself to master, and of a "different world" that, he believes, he can understand. The effort that Dr. Taketa makes to engage Alex in a greeting testifies to his commitment to interact with Alex as a person in his own right, to "see" and "know" Alex as someone worthy of recognition, and by extension, worthy of the effort of providing high quality care.

Dr. Taketa's effort also affirms Simone's orchestration of Alex's 'presentation of self' during this healthcare visit (Goffman 1955) that inevitably, for Simone, is linked to Dr. Taketa's perception of Alex as a responsive, speaking, and relational being (Solomon et al. in press). The significance of Simone's efforts is supported by studies showing that doctors are more likely to view a patient positively if they perceive the patient to have positive affect (Street et al. 2007). Micro-level analysis of such interactions provides a lens onto other kinds of work that Simone and other mothers of children with ASD carry out both at the doctor's office, and at home when their children become ill. The next section describes this interactional work in more detail.

Problem Presentation and the Intersubjective Accessibility of Children's Illness Experiences

Comparing and contrasting video-recorded problem presentation sequences of TD children and children with ASD, we identified the following interactional dynamic: even when the mother was the primary informant about the TD child's medical problem, the child was presented as a corroborative witness and experiencer of that problem. In our data, a TD child's health problem was frequently constituted via a mother's narrative account about eliciting and attending to the child's complaints and descriptions of

discomfort at home; closely observing the child's physical appearance and behavior changes; and comparing her observations with what she considers 'usual' for her child. The child's health problem may also be grounded in the mother's description of the frequency, appearance and change of the child's upper respiratory and nasal discharge, vomiting, diarrhea, and other physical manifestations of illness. Such 'pre-visit' epistemic and interactional work is premised upon two tacit expectations: that the child is intersubjectively 'readable' and comprehensible to the mother (Solomon and Lawlor 2013), and that the child possesses the self-reflective and communicative competence to participate in the 'pre-visit' epistemic work by describing and indicating discomfort and other experiences.

In the following example, the pediatrician's question about the onset of symptoms is the object of corroborated recollection between an 11-year old TD child, Chelsea, and her mother. The mother's first question at line 3 asks Chelsea when she noticed the symptoms, and subsequently the mother makes a distinction between her daughter's 'noticing' the symptoms and 'mentioning' them the previous day (line 5). Chelsea then confirms 'yesterday' as the point at which her symptoms emerged.

Presenting problem 1: TD Child

1	Doctor	Was it like that over thuh weekend too?
2		(0.2)
→3	Mother	Uh:m: When did you notice it.
4		(.)
→5	Mother	Y <u>e</u> sterday you mentioned it.
6	Chelsea	Y <u>e</u> sterday.
7	Doctor:	M[kay.
→8	Mother	[It started yesterday. ()](0.5)
9		(0.2)
→10	Doctor	°Lemme write that i:n,°
11		(0.5)
12	Doctor	Anybody <u>e</u> lse sick in thuh house?

Here both mother and pediatrician treat 'yesterday' as the answer of record (at lines 7, 8, 10) only after the child's confirmation at line 6. In this excerpt, the child is treated as an agentive participant in the conversation, and the mother as an observer, interpreter and historian of her daughter's experiences and signs of illness.

In cases where children may be unable to answer a question by themselves, they and their caregivers can make references to *previous common experiences*, as in the next case where the child, Diane, aged nine, has difficulty in answering a question about vomiting and diarrhea. Faced with this question (line 8), she hesitates (line 9), assumes a 'thinking face' (line 10), and then turns to gaze at her mother (line 11). At this point the mother unhesitatingly offers an evaluation of what Diane has silently evoked as a past, potentially problematic occurrence, the knowledge and significance of which they both share (line 12):

Presenting problem 2: TD Child

- 1 Doctor Are you eating?
- 2 (0.2)
- 3 Diane Y:gah:,
- 4 (0.5)
- 5 Doctor (eat,)
- 6 (0.2)
- 7 Doctor Okay.
- 8 Doctor .hh Any vomiting er diarrhea?
- 9 (0.4)
- 10 Diane Mm: ('Thinking' face)
- 11 (0.2) (Diane turns gaze to Mother)
- 12 Mother That wasn't diarrhea honey,
- 13 Doctor No, okay. So no vomiting, no diarrhea,

It is noticeable that the mother's response, which is registered by the pediatrician at line 13, was directed to the child, Diane, and that Diane's silent query is itself a component of the conclusion that the pediatrician proceeds to enter into the patient's chart. The important insight here lies in the reference to the previous experiences in the home, accomplished by only eye gaze that Diane directs at her mother. The child and her mother demonstrate to each other and to the doctor that they both remember, share and agree upon an interpretation of Diane's past experience that could be a sign of illness.

Finally even where the child is not physically present, as in the following 'after hours' phone call to a primary care physician, the mother unhesitatingly quotes the conversation she has had with her 4 year old daughter about her symptoms (line 10):

Presenting problem 3: TD Child

- 1 Doctor Ri:ght. 'hh Is she: how is she in herself:,
- 2 (0.6)
- 3 Mother She's listless.<[She doesn't know- I [tried ta get her ta bed=
- 4 Doctor [' hhh [hhh
- 5 Mother =thinking that yihkn[ow she'd be be'er o[ff_ (.) if she would go=
- 6 Doctor [' hhhh [hhhhh
- 7 Mother =to bed an' ha[ve a sleep, b[ut uh
- 8 Doctor [' hhhh [Yeah,
- 9 (.)
- 10 Mother And she said her tummy's burning insi:de.

Here, although the child is physically absent, she is framed in the mother–doctor phone conversation as an agent whose description of her experiences ('she said her tummy's burning insi:de') and, by extension, her previous conversation with her mother about them, are presented as reported speech. These three excerpts demonstrate the social enactment of agency, accountability and personhood that are unhesitatingly attributed to even quite young TD children in pediatric settings, and is successfully taken up by them.

Such accounts are rare in the data of children with ASD. In the example below, Leo, who is 8 years old and who was diagnosed with ASD at age 3, is asked by his gastroenterologist to point to a place where his stomach hurts. Instead of pointing, he responds by inflating his stomach so it moves up and down five times, a response that the doctor treats as amusing but insufficient as she immediately redirects her question to Leo's mother. Leo's father is also in the room during the visit, however, most of the questions that the doctor asks, including the question about the

location of Leo's stomach pain, are directed to and are answered by the mother, which indicates the doctor's and the mother's mutual orientation to her accountability as the main historian, observer and interpreter of Leo's illness experiences and symptoms.

Presenting Problem 4: Child with ASD

- 1 Doctor ((To Leo who is sitting on the exam table, looking down))
- 2 Can I lay you back on the bed here?
- 3 (1.3) ((glances at Leo's face, he does not respond))
- 4 ((Helps him lay on his back on the exam table))
- 5 The:re you go:.
- 6 (3.8)
- 7 I like your >cute little backpack.<
- 8 (1.0)
- 9 >Alright< Bend your knees up?
- 10 (0.5)
- 11 and show me where your belly hurts.
- 12 when you have the belly pain.
- 13 ((looks at Leo's face, see Figure 6))
- 14 (0.4)
- 15 Can you show me?

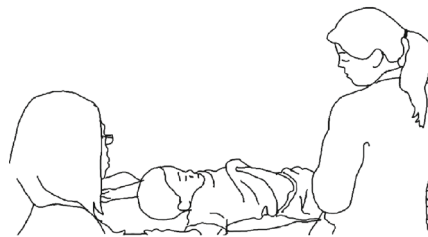


FIGURE 6

- 16 Leo Mm hm.
- 17 Doctor: [Where- point for me.
- 17 Doctor [((moves his shirt up, leaving more of his stomach bare, moves her hand away))
- 20 Leo ((inflates his stomach up and down, five times, see Figure 7))

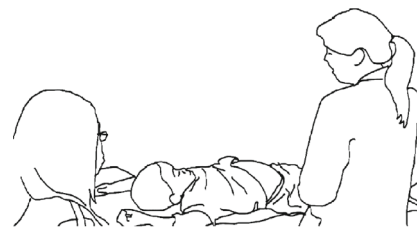


FIGURE 7

- 21 ((the doctor, the mother, the father and the researcher all laugh; the
- 22 mother puts her hand over her mouth, laughing))
- 23 Doctor ((bends Leo's knees, shifts gaze to mother))
- 24 Can you sh- can you show me where-
- 25 does he p- does he point to [a certain area?
- 26 Mother [Yeah he usually-
- 27 ((points on Leo's stomach, see Figure 8))
- 28 points right here. (.)



FIGURE 8

29 Doctor Just on the side?
 30 Mother [and right here.
 31 [((points on Leo's stomach again))
 32 Leo ((Puts his hand on top of mother's hand, see figure 9))

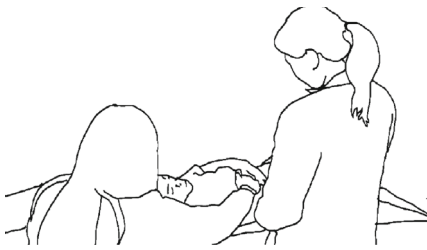


FIGURE 9

Leo responds affirmatively with (Mm hm.) at line 16 to the doctor's request in lines 11 and 12 (show me where your belly hurts when you have the belly pain), which, after a pause and the doctor's expectant gaze at Leo's face, is followed by another request, a question at line 15 (Can you show me?). Leo's reply 'Mm hm.' (line 16) indicates that he may know that he has been selected as a next speaker and that he is to take the next turn or make the next move. When the doctor pursues her request for information a second time at line 17 (Point for me), Leo gives an embodied response in line 20, inflating his stomach up and down five times. However amusing this response is to the doctor, it is framed as inadequate relative to her request for a demonstrative point. She immediately turns to the mother for guidance: 'Can you sh- can you show me where- does he p- does he point to a certain area?' (lines 24 and 25). When the mother describes and points on Leo's stomach the location of pain that he has indicated to her in the past (lines 26, 27, 28, 30, 31), Leo immediately places his hand on top of his mothers' (line 32).

This action raises an important, but epistemologically problematic, question concerning how intersubjectivity may be accomplished with individuals diagnosed with ASD. On the one hand, Leo's action may be seen as a purely behavioral response to the sensation of the mother's hand on his stomach. A more 'generous' interpretation (Ochs and Solomon 2010), however, would be to infer that Leo is joining his mother in indicating the location of his pain. Perhaps a mother's extensive embodied, haptic and relational experience and knowledge of her child (De Wolfe 2014; Eyal and Hart 2010; Lawlor 2004; Silverman 2011; Solomon and Lawlor 2013) may enable her to respond to the question regarding the location of his pain. Here we simply note that our observer's problem in understanding these data is one which we share with the doctor and, to some degree, perhaps with the mother as well.

The remarkable feature of this child–mother–doctor interaction is, first, that there is a distributed way to locate 'the belly pain' carried out by Leo (by inflating his stomach) and his mother (by pointing on its surface). Second,

the mother's response implies that at home, or somewhere other than in the doctor's office, Leo *is* able to carry out the action that he was just unable to carry out for the doctor, i.e. to point to the place on his body where he experiences pain. Thus, Leo's mother portrays him as an accountable experiencer, communicator and epistemic 'owner' of his illness, and thus as a child who is 'readable' and intersubjectively accessible to her (Solomon and Lawlor 2013). It has been suggested that children with ASD may have atypical perception of pain (American Psychiatric Association 2013), which potentially makes indicating its location more challenging on top of the communicative limitations associated with an ASD diagnosis.

Leo may also face other difficulties during this healthcare visit that are linked to the morpho-syntactic properties of the doctor's utterances directed to him. First, the flow of the doctor's talk and her other social actions include a complement on Leo's 'cute little backpack', a directive to bend his knees, a manipulation of Leo's body, and then a question about the location of his stomach pain. In order to parse and comprehend these actions, and to locate 'show me where your belly hurts' (line 11) as the question that warrants a response, Leo needs to be what Jefferson (1984) called "other-attentive", i.e. able to attend to the doctor's concerns and to know how to indicate and describe his pain to her in ways that make it understandable. Second, if he was not having stomach pain when the doctor asked "show me where your belly hurts" (line 11), it may be difficult for him to have a non-literal, asynchronous interpretation and infer that the doctor is referring to real events projected into the indefinite past. We are left to wonder whether Dr. Taketa's 'different language' approach to communication with children with ASD may have resulted in different turn-construction practices and morpho-syntactic structures in such an interaction. These difficulties may point to a set of problems linked to the nature and the logic of a 'project' that constitutes a healthcare visit, i.e. that the questions about Leo's stomach pain relate to Leo's previous experiences, and necessitate that he is able to both access and narrate them with others' worldview in mind. These are exactly the kinds of events, however, that TD children and their mothers come together to address in their 'pre-visit' epistemic and interactional work that becomes articulated to the doctor during problem presentation.

The intersubjective accessibility of Leo's illness experience appears uncertain in the rest of this visit as well. This can be gleaned from the following interaction that took place during history-taking phase earlier in the visit than the interaction discussed above. This example shows the complexity of interpreting pain and discomfort experienced by a child with ASD who communicates verbally but still may be unable to describe his experiences, leaving his parents without a corroborated account.

In the following example, the doctor is seated facing Leo's mother and father, who are seated next to one another while Leo is standing between them:

- Presenting problem 5: Child with ASD**
- 1 Doctor Uhm (.) does he complain of having belly pain?
 2 Mother Yes he ha:[:s.
 3 Doctor [Yeah? and >how often is that.<
 4 [(writes in the medical chart)
 5 Mother ((looking up, assumes a 'thinking face')) Uhhmm-
 6 he complain:ed abo:ut- (6.0) couple of times. >I can't even count.<
 7 but he has complained about it.
 8 Doctor Okay.
 9 Mother I don't remember [how many times.
 →10 Doctor [And that's ongoing as well?=
 11 Mother [Yeah.
 12 Doctor [=or is that new?
 13 Mother No it's not [new.
 14 Doctor [No?
 15 Mother It's- it's ongoing.
 →16 Doctor Okay, it hasn't improved at all.
 17 Mother Uhhmm. (2.0) It ha::s. he's not complaining ab- about it as much,
 18 but he does complain [that his stomach hurts.
 →19 Doctor [Ok:ay. is it after he gats or is there any s-
 20 specific time of the dha:y when he has his belly pa:in?
 21 (3.0)
 22 ((doctor shifts gaze from the mother to the father then back to the
 23 mother))
 24 Mother No:: it's us- it's just [ra:ndom.
 25 Father [Sort of. (.) yeah.
 26 Mother It's kind of random yeah
 27 Doctor >It's kind of random?< Okay.
 →28 Uhm do any foo:ds that make it worse- or better?
 29 Leo (... U/I ...)
 30 ((Leo's vocalizations, however unclear, have the prosodic contours
 31 of responses to questions and are interspersed with 'uhm', 'ehhh'-
 32 and 'may be'; the adults are not orienting to these utterances as to
 33 potential contributions to the on-going conversation))
 34 Mother [No:.
 35 Father [No:.
 →36 Doctor No. okay. does he sleep through the night? or does his pain wake
 37 him up at night.
 38 Mother He does not sleep through the night.
 39 Doctor He does not sleep through the night?
 40 Mother No::.
 →41 Doctor Uhm from the pain? he wakes up from the pain?
 42 Mother I believe he does? (.) uhm- s- sometimes?- but he does not sleep
 43 through the night at all.

This excerpt shows the doctor's attempts to establish history of Leo's stomach pain (lines 1, 3, 10, 12, 16, 19, 20, 28, 36, 37, 39, 41) and the difficulty that Leo's parents have in describing his symptoms, their timing and even whether they are associated with him waking up at night. These descriptions point to the challenges that Leo's mother and father face in having the kinds of "pre-visit" conversations with Leo that we have described in the three examples involving TD children.

Discussion

Physicians working in the U.S. pediatric primary and specialty care settings see a significant percentage of children diagnosed with ASD (American Psychiatric Association 2000, 2013), yet how this condition affects child-parent-doctor communication during medical problem presentation has not been sufficiently examined. Large-scale studies (e.g. Croen et al. 2006; Kogan et al.

2008) have presented a contradictory picture of increased healthcare utilization co-occurring with unmet healthcare needs, which has been attributed to several separate factors: the children's communicative limitations; ambiguous symptom presentation; atypical displays of discomfort; and sensory, vestibular and self-regulatory challenges that affect their behavior and make participation in the healthcare encounter difficult (Goldson and Bauman 2007; Lajonchere et al. 2012). Our goal was to describe social processes and interactional patterns that reveal how such challenges converge during pediatric encounters to influence child-parent-doctor communication, potentially negatively affecting quality of the children's healthcare and contributing to mis-diagnosis, foregone medical care, and unmet healthcare needs.

We have described two frequently encountered difficulties in visits with children diagnosed with ASD: recognition of the child as an agentive patient that is highly desirable on socio-medical and ethical grounds, and yet is difficult to achieve; and problem presentation and symptom descriptions that present difficulties for children with ASD and their parents. In particular, children with ASD may be unavailable for the kinds of "pre-visit" problem-oriented conversations with their parents that allow the latter to present corroborated symptom reports grounded in children's experiences. Children with ASD may also have difficulty with certain language practices, including morpho-syntactic constructions that depend on perspective-taking or other abilities that are part of normative communicative competence tacitly expected of children during healthcare visits. This may hinder the visit's progress while, simultaneously, undermining the significance of the child as a subject-actor in the context of his or her own medical needs.

Our contrastive analysis of the healthcare encounters data of TD children and children with ASD also points to a larger challenge of socializing children with ASD into the role of competent recipients of healthcare, a process that is tacitly taken for granted in healthcare encounters of TD children where the gradual attribution of responsibility to provide medically-relevant information increases with the child's age (Cahill and Papageorgiou 2007; Stivers 2011; Stivers and Majid 2007; Bates and Meeuwesen 2000). These processes of, and opportunities for, socialization into an increasingly competent patient role can be clearly seen during video-analysis of healthcare visits, in the sequential organization of greeting sequences at the onset of the visit that acknowledge the child as a competent and responsive interactant, and in the minutia of turn-taking, e.g. in a doctor's fleeting glance to the child's face while waiting for a reply to a question, before the doctor shifts the gaze to the parent. The paucity of these opportunities and expectations for a responsive action of children with ASD may mean a

life-long challenge of receiving care (Nicolaidis et al. 2012, in press) that is described in such detail by those researchers who document cases of serious and life-threatening conditions of adults with this diagnosis (e.g. Radcliff 2013; Smith et al. 2012). Systematically adapting healthcare environments in ways that depart from the tacit expectations grounded in the TD children's behavior during visits, and that provide more socializing opportunities for children with ASD, may be a necessary first step in addressing the problem of 'diagnostic overshadowing' (Siegel and Gabriels 2014) and foregone care (Bauman 2010).

Our analysis has limitations in that we brought together white middle-class TD children's healthcare encounters collected in more socio-economically advantaged areas of Los Angeles County to compare them with healthcare encounters of African American children with ASD of variable socio-economic status, collected in more disadvantaged areas of Los Angeles County. While this may seem a problematic comparison, we argue that the tacit expectations of the processes presumed necessary for the interactional achievement of the healthcare visits are powerfully organized by the behavior and capabilities of the white middle class TD pediatric population who are perceived to be the 'norm' of comportment, communication and self-directed insight about their illness experiences (Stivers and Majid 2007).

Our analysis points to the critical need for additional resources and strategies that may facilitate how children with ASD participate as corroborating witnesses of their own illness experiences and medical complaints. Because the healthcare encounter is the epicenter of healthcare, maximizing inclusion of children with ASD in their encounters is consistent with the health equity goals for this traditionally underserved population and would be an important contribution to public health more generally.

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Author contributions Olga Solomon conceived of the study, carried out its design and coordination, conducted data analysis and interpretation, and drafted the manuscript; John Heritage conceived of the study, carried out its design and coordination, conducted data analysis and interpretation, and helped to draft the manuscript; Larry Yin participated in coordination of the study, and in data analysis and interpretation; Douglas W. Maynard participated in data analysis and interpretation; Margaret L. Bauman participated in data analysis and interpretation, and articulated implications of the research. All authors made substantive intellectual contributions to the published study, and all read and approved the final manuscript.

Compliance with Ethical Standards

Ethical Approval Statement All procedures performed in this research were approved by the Institutional Review Boards of our respective universities and conducted in accordance with the ethical standards of the institutional and/or national research committees and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Appendix: Glossary of Transcript Symbols (Jefferson 2004, pp. 13–31)

[A left bracket indicates the point of overlap onset.
=	Equal signs indicate no break or gap. A pair of equal signs, one at the end of one line and one at the beginning of a next, indicate no break between the two lines.
(0.0)	Numbers in parentheses indicate elapsed time by tenths of seconds.
(.)	A dot in parentheses indicates a brief interval.
—	Underscoring indicates some form of stress, via pitch and/or amplitude.
::	Colons indicate prolongation of the immediately prior sound. The longer the colon row, the longer the prolongation.
↑↓	Arrows indicate shifts into especially high or low pitch.
.,?	Punctuation markers are used to indicate 'the usual' intonation (falling, continuing, and rising, respectively).
WORD	Upper case indicates especially loud sounds relative to the surrounding talk.
-word-	Degree signs bracketing an utterance or utterance-part indicate that the sounds are softer than the surrounding talk.
-	A dash indicates a cut-off.
><	Right/left carats bracketing an utterance or utterance-part indicate that the bracketed material is speeded up, compared to the surrounding talk.
<>	Left/right carats bracketing an utterance or utterance-part indicate that the bracketed material is slowed down, compared to the surrounding talk.
wohhrd	A row of 'h's within a word indicates breathiness.
(())	Doubled parentheses contain transcriber's descriptions.
(word)	Parenthesized words and speaker designations are unclear.

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