

Use of ChatGPT in networks of early childhood interventions

Position paper

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Abstract

To provide targeted support for families in stressful life situations around birth and during the first years of the child's life, regional Early Intervention Networks have been increasingly expanded and maintained in Germany for over a decade. Despite many efforts, challenges remain, particularly in connecting actors from the healthcare sector and child and youth welfare services. The AI tool ChatGPT offers potential solutions to address these challenges related to resources and communication. It can provide professionals with guidance and help overcome language barriers by translating content into the primary language or simple language. However, ethical aspects and limitations in using ChatGPT must be considered, and continuous critical reflection is necessary.

Keywords: artificial intelligence, ChatGPT, early childhood interventions, GPT-3, GPT-4, interprofessional collaboration, machine learning, vulnerable families

Resumen

Para proporcionar apoyo específico a las familias en situaciones estresantes de la vida en el contexto del nacimiento y durante los primeros años de vida del niño, las redes de las ayudas en una etapa temprana regionales se han expandido y mantenido en Alemania durante más de una década. A pesar de muchos esfuerzos, aún quedan desafíos, particularmente en la conexión de actores del sector sanitario y los servicios de bienestar infantil y juvenil. La herramienta de inteligencia artificial ChatGPT ofrece soluciones potenciales para abordar estos desafíos relacionados con los recursos y la comunicación en el ámbito de ayuda temprana. Puede proporcionar orientación a los profesionales y ayudar a superar las barreras del idioma traduciendo el contenido al idioma materno o a un lenguaje simple, de fácil entendimiento. Sin embargo, se deben considerar los aspectos éticos y las limitaciones en el uso de ChatGPT, y es necesaria una reflexión crítica y continua.

Palabras claves: aprendizaje automático, ayudas en una etapa temprana, ChatGPT, colaboración interprofesional, familias vulnerables, GPT-3, GPT-4, inteligencia artificial,

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List of abbreviations

AI	artificial intelligence
BMFSFJ	Federal Ministry for Family Affairs, Senior Citizens, Women and Youth
GPT	generative pretrained transformer
ML	machine learning
NZFH	National Centre for Early Prevention
SGB VIII	Social Code – Book VIII (Child and Youth Services Act)

1. Introduction

By fostering interdisciplinary networking among regional actors, extending even beyond their own sectors, targeted support can be provided to families experiencing stressful situations during childbirth and the first years of life (Eickhorst et al., 2016; Scharmanksi & Renner, 2019, p. 4). However, in the practice of early support, there are various challenges that, for example, complicate the networking of healthcare network partners with selected contact persons in child and youth welfare services (Naranjos Velazquez, 2023, p. 76 f.). Since access to families is particularly advantageous during the phase around birth, the examples presented in this impulse paper refer to three different actors in the healthcare system: maternity clinics, freelance midwives, and resident paediatricians. In Germany, a large proportion of children are born in a clinic (Scharmanksi & Renner, 2019, p. 8). Funded through health insurance, women can access midwifery support in a home environment from pregnancy until the end of breastfeeding. Paediatric preventive examinations (U-examinations) are largely part of regular appointments (Renner et al., 2018). The objective of this impulse paper is to highlight specific challenges in implementing the networking concept within the early support field in Germany, while presenting practical solutions that can be applied using ChatGPT. ChatGPT, released by OpenAI (2023), has been freely accessible on the internet since November 2022. At present, its usage is free of charge. This paper introduces impulses for using this artificial intelligence for work in early support networks as an interdisciplinary field of work. Finally, a reflection on possible ethical aspects and current limitations of ChatGPT is provided.

2. Background

2.1 Early childhood prevention networks

Early interventions are preventive services for families in challenging situations, such as poverty, financial worries, domestic violence, or mental illnesses (Scharmanski & Renner, 2019, p. 6). Early support services are available to families around the time of birth to prevent or mitigate potential risks to child welfare later and to increase the likelihood of healthy child development. The concept of early interventions originated in early promotion and was first implemented in the 1960s in the United States. In Germany, there is no uniform definition or implementation of early interventions. The various services can be universally or selectively preventive and are designed to support families who reach their competence limits due to cumulatively acting risk factors. If these services are insufficient, it is the responsibility of early support actors to refer families to providers of tertiary prevention services (Eickhorst et al., 2016; Feldman, 2004; Sann, 2020; Scharmanski & Renner, 2019, p. 4 ff.; Ziegenhain et al., 2011, p. 29 f.). Following the revision of § 8a SGB VIII (Social Code – Book VIII) in 2005, the issue of child protection was increasingly discussed among professionals, and the German Federal Government initiated the action programme "Early Support for Parents and Children and Social Early Warning Systems" (2006-2010), which funded pilot projects in all federal states. These were coordinated and scientifically monitored by the National Centre for Early Support (NZFH) (Sann, 2020). Since 2018, the long-term financial security of regional early childhood intervention networks has been provided by the Federal Foundation for Early Support of the Federal Ministry for Family Affairs, Senior Citizens, Women, and Youth (BMFSFJ) (Scharmanski & Renner, 2019, p. 4).

Networking of early childhood prevention programs

To ensure that early support services reach families in psychosocially challenging life situations, there is a need for interprofessional networking of individual actors at the regional level. This includes, for example, the exchange between maternity hospitals, freelance midwives, and resident paediatricians. As the issues facing families with various risk factors can be extremely complex, in addition to interprofessional networking, intersectoral connections are also necessary. This would be the case if, for example, the two aforementioned health sector actors interact with childcare and youth welfare actors, such as educational counselling centres or local social pedagogical family support services (Naranjos Velazquez, 2023, p. 18 ff.; Scharmanski & Renner, 2019, p. 4). These intersectoral networking structures should have been developed and expanded in recent years, in addition to the previously mentioned objectives of early support services (Brand & Jungmann, 2013; Sann, 2020). According to the current state of research, it is assumed that this necessary networking has

not yet been established. In addition, there is still a lack of further systematic investigations into regional networking structures, as can be found in studies such as those Naranjos Velazquez (2023), Küster et al. (2010), or Küster et al. (2017).

Challenges in networking activities

The practical implementation of interprofessional or intersectoral networking activities, for example from the perspective of freelance midwives, has been identified as a challenge in both the international and German research landscape. Challenges include not only communicative hurdles and differing role understandings, but also a lack of resources, in terms of both finances and time (Naranjos Velazquez, 2023, p. 68 ff.). Furthermore, there is the added difficulty that freelance midwives, similar to resident doctors, serve families from potentially much larger catchment areas than, for example, providers of child and youth welfare services. Consequently, more resources need to be allocated overall for networking activities (Naranjos Velazquez, 2023, p. 128).

Two categories of challenges within the practice field of early support services

For additional elaboration in the present discussion paper, two types of challenges will be considered:

I. resources

II. communication

- a. interprofessional level
- b. professional-recipient level

2.2 Artificial Intelligence and ChatGPT

Philosophers and psychologists have been investigating, for several millennia, the characteristics of human intelligence and intelligent behaviour, and how these can be applied to Artificial Intelligence (AI) (Bauckhage, Hübner, Hug, Paaß & Rüping, 2021, p. 429). In the field of pedagogy, it is becoming increasingly important to engage with this subject matter. A crucial element of intelligence is the ability to learn. Machine learning (ML) is a principal component of AI and a research area in computer science. A substantial proportion of current AI systems are based on ML, which has been developed over the past decades. Due to the availability of vast amounts of data from various domains in society, economy, and science, machine learning techniques can now solve overly complex problems and generate the best possible results. Examples include answering questions, early diagnosis of diseases

at different life stages, identification of traffic situations in AI-controlled autonomous vehicles, and monitoring manufacturing processes in industry (Alshurafat, 2023; Bauckhage, Hübner, Hug, Paaß & Rüping, 2021; Deng & Lin, 2022; Kishor & Chakraborty, 2022; McGinnis et al., 2019; Steiner & Tschopp, 2022). Moreover, AI-based chatbots contribute to enhanced customer service and resource savings within organisations (Kaiser et al., 2019; Mattas, 2023). Consequently, AI-based technologies can be found in numerous private and public contexts. (Deutscher Ethikrat, 2023, p. 7). These include fields within healthcare (Dugan et al., 2015; McGinnis et al., 2019) as well as child and youth welfare (Steiner & Tschopp, 2022).

Expert knowledge versus Machine Learning

Neural networks complement ML by replicating the structure of the human brain. In recent years, they have been increasingly used for the development of autonomous vehicles and medical diagnoses. It is expected that these models will achieve, and in some cases surpass, human-level performance in areas such as control, language processing, and image recognition. However, regarding safety, it should be noted that the maximum performance of these applications is only achieved in controlled laboratory situations (Bauckhage, Fürnkranz & Paaß, 2021).

Processing natural language with ChatGPT

In natural language processing (NLP), the focus is on the interaction between human language and computers. The development of algorithms and computer programmes allows for the understanding, generation, or translation of human natural language in written or spoken form. OpenAI developed ChatGPT to facilitate conversations between humans and computers. ChatGPT understands the context of a conversation and provides appropriate responses, including translations into various languages. Upon request, ChatGPT generates text in specific tones, such as formal, simple, or humorous. Since ChatGPT has been trained on vast amounts of data, it can often deliver high-quality responses (Deng & Lin, 2022).

Advantages and Disadvantages of ChatGPT

Since November 2022, ChatGPT has been available for free use (OpenAI 2023). Initial opportunities and challenges in dealing with ChatGPT currently being discussed are summarised in Table 1 below. Some of these challenges are already familiar from previous AI models. ChatGPT is based on the language model GPT-3 (Generative Pretrained Transformer). The earlier language model, GPT-2, was also used for AI-based generation of patents or stories. However, concerns were raised within the professional community that GPT-2 could potentially generate uncontrollable amounts of misinformation (Alkaissi & McFarlane, 2023; Bauckhage, Hübner, Hug & Paaß, 2021).

Table 1: Advantages and disadvantages using ChatGPT (in reference to Deng & Lin, 2022)

ChatGPT	
Opportunities	Challenges
<ul style="list-style-type: none">• time- and resource-saving through more efficient and automated work processes	<ul style="list-style-type: none">• misuse: Creation of counterfeit content, mis-information, identity theft
<ul style="list-style-type: none">• precise responses due to training with large volumes of data	<ul style="list-style-type: none">• discrimination: Responses may be based on prejudice or stereotypes
<ul style="list-style-type: none">• cost reduction in business areas with chatbots in customer service.	<ul style="list-style-type: none">• Answers are solely based on the text provided, with no access to the internet available

3. State of research

Actors from the healthcare system play a crucial role in early childhood prevention networks, as they have early access to families around the birthing phase. This access can be used to enable non-stigmatising access to regional early intervention services (Sann, 2020). It is estimated that about 13 percent of families with young children living in Germany are in stressful life situations and require additional support. However, it is well known that these families can be challenging to reach with appropriate regional services. Therefore, the inter-professional networking of early intervention services is even more important (Scharmanski & Renner, 2019, p. 5 ff.). Key network actors include, for example, freelance midwives. Their support, funded by health insurance providers, can begin as early as the start of pregnancy. After the birth, these healthcare professionals also support families in their home environment, which helps to develop a relationship based on trust (Renner et al., 2018). Since about 98 percent of all children in Germany are born in hospitals, hospital staff also represent a crucial contact point for families in stressful life situations (Scharmanski & Renner, 2019, p. 8). Furthermore, paediatricians have excellent access to this target group of early intervention services after the child's birth (Eickhorst et al., 2016). Gynaecologists are among other potential network actors; however, family health and paediatric nurses, family midwives, pregnancy (conflict) counselling centres, and public health departments will not be considered further in this context (Sann, 2020).

3.1 Challenges in maternity clinics

As part of the ZuFa monitoring ("Together for Families" monitoring - health and early support), access to families in stressful life situations was also evaluated. In addition to the question about the current expansion status of the navigation service, it was also about whether difficult life situations in families can even be identified by clinic staff (Scharmanski & Renner, 2019, p. 5 ff.). The representative results showed that the obstetric staff can reliably assess these life situations, with three types of stressors known in the context of early support making up the largest proportion (Scharmanski & Renner, 2019, p. 12 f.):

- linguistic barriers due to low German language skills of the parents (16.7%)
- indications of poverty (11.8%)
- uncertain residency status (refugee, asylum) (10.5%)

Regarding the handling of identified factors of stressful life situations, staff from clinics without navigation services also stated that accompanying these families is more time-consuming. However, these time resources are often not available, which leads to higher emotional stress for the clinic staff. Nevertheless, there are hardly any systematic networking activities with regional early support networks. Although obstetric clinic staff participate in regional early support network meetings in more than half of the clinics (60 percent), concrete definition of action measures (48 percent) or regular team meetings on families in stressful life situations (32 percent) are conducted in less than half of all maternity clinics (Scharmanski & Renner, 2019, p. 14 f.). If such a navigation service was implemented in practice, study participants reported that most contacts were made in 2016 with the following external actors: child and youth welfare office, family, health and child nurses, family midwives, freelance midwives without additional qualifications, pregnancy counselling centres, migration services and/or counselling centres (Scharmanski & Renner, 2019, p. 17 f.).

3.2 Networking of midwives and paediatricians

The involvement of health professionals from outpatient groups in local early support networks has always been a challenge (Renner et al., 2018). In addition to the lack of financial and time resources, organizational aspects have an unfavourable influence. For example, providers of child and youth welfare services are only responsible for one city or district. In contrast, freelance midwives, or paediatricians care for families from different cities and regions (Naranjos Velazquez, 2023, p. 140 f.). Regarding involvement in early support networks, this means that outpatient professional groups would have to be active in at least two different networks, not just one. However, this is not given due to the reasons mentioned above. An additional challenge is that in some federal states, such as Mecklenburg-Western Pomerania, insufficient networking structures further complicate access to early support for these professional groups (Naranjos Velazquez, 2023, p. 67 f.). These framework conditions also lead in practice to the fact that despite the high importance of each professional group, the experiences in working with them from the perspective of the management and coordination level of early support, i.e. the youth and health authorities, are not always described as advantageous (NZFH, 2014, p. 59 ff.).

3.3. Using ChatGPT in professional contexts

At present, there are case studies and descriptive works on the use of ChatGPT. In addition to experimental designs for using ChatGPT, these publications address both the opportunities and limitations of this AI tool (Alkaissi & McFarlane, 2023; Alshurafat, 2023; Deng & Lin, 2022; Oviedo-Trespalacios et al., 2023; Sallam, 2023; Steiner & Tschopp, 2022). Due to the simplified access to ChatGPT, a broad application in professional contexts can be observed. While the predecessor version (GPT-2) was only used in selected professional fields (Bauckhage, Hübner, Hug, Paaß & Rüping, 2021), numerous other application areas are described in connection with GPT-3 (Shahriar & Hayawi, 2023; Tustumi et al., 2023). For example, companies use these AI-based models to increase productivity by improving work processes. The following are examples of focal points of publications in which AI-based tools play a supportive role in decision-making by experts:

- **in general:** customer services (Mattas, 2023)
- **healthcare sector:**
 - efficiency (Gabrielson et al., 2023)
 - accuracy (Hirosawa et al., 2023; Nassif et al., 2022)
 - clinical workflow (Rao et al., 2023; Vasey et al., 2022)
 - monitoring (Kishor & Chakraborty, 2022)
- **child health:**
 - anxiety and depression (McGinnis et al., 2019)
 - early intervention (Sierra et al., 2022)

4. ChatGPT meets early childhood prevention networks: interim conclusion

The role of healthcare system actors in early childhood prevention Networks is of immense importance due to their prompt access to families in stressful life situations (Sann, 2020). Therefore, the interprofessional networking of early intervention services is essential to better reach and support these families (Scharmanksi & Renner, 2019, p. 5 ff.). Important network actors include, for example, freelance midwives, hospital staff, paediatricians, and gynaecologists (Eickhorst et al., 2016; Renner et al., 2018; Sann, 2020; Scharmanksi & Renner, 2019, p. 8). One of the challenges in maternity clinics is the identification and management of families in stressful life situations (Scharmanksi & Renner, 2019, p. 5 ff.). Furthermore, networking practices and the integration of midwives and paediatricians into local early childhood intervention networks are often problematic due to a lack of financial, temporal, and organisational resources (Naranjos Velazquez, 2023, p. 140 f.; NZFH, 2014, p. 59 ff.; Renner et al., 2018).

In this context, the use of ChatGPT in professional settings could provide an opportunity to simplify collaboration and networking between various actors in the field of early childhood intervention. Case studies and descriptive works on the application of ChatGPT illustrate the opportunities and limitations of this AI tool (Alkaissi & McFarlane, 2023; Alshurafat, 2023; Deng & Lin, 2022; Oviedo-Trespalcios et al., 2023; Sallam, 2023; Steiner & Tschopp, 2022). The widespread use of ChatGPT in professional settings, particularly in healthcare, could optimise workflows and increase productivity (Bauckhage, Hübner, Hug, Paaß & Rüping, 2021). The integration of ChatGPT in the context of early childhood intervention could thus contribute to improving the orientation of various actors in dynamic regional networks and, in this way, positively influence access to early intervention services for families in stressful life situations. However, further research and evaluation are necessary to explore the potential of ChatGPT in this area and to identify challenges and limitations in its use across different contexts.

5. Impulses and recommendations for action

In the following, potential areas of application for ChatGPT in Early Childhood Intervention Networks are outlined, offering workable solutions for the challenges described in regional networks on two distinct levels:

- Orientation of potential network actors, and
- Professional-recipient interaction.

In this context, however, it should be noted in advance that despite the immediate potential for using this tool (<https://chat.openai.com>), medium and long-term planning of one's own networking activities in the context of Early Childhood Intervention Networks will always be necessary. After all, AI-based tools such as ChatGPT cannot replace networking between real people.

5.1 ChatGPT for network orientation

The use of AI-based tools has proven to be effective in the healthcare sector, such as in the early diagnosis of diseases at different stages of life (Bauckhage, Hübner, Hug, Paaß & Rüping, 2021). The language model GPT-3 is also being utilised in this context for various healthcare applications (Hirosawa et al., 2023). In the following, possibilities for using ChatGPT to network professionals from the healthcare sector with those from other sectors, such as child and youth welfare, will be outlined. The following case studies were added to the chat window in ChatGPT using the "copy-and-paste" function. Similarly, a specific task for ChatGPT: *„Nenne drei Vorschläge für konkrete Anlaufstellen in der Hansestadt Rostock, um Beratungs- oder Unterstützungsangebote für die jeweilige Situation auswählen zu können.“* (English: *“List three suggestions for specific contact points in the Hanseatic city of Rostock, in order to be able to select counselling or support services for the respective situation.”*)

Case study 1: freelance midwife

ChatGPT, as an AI, can be an additional online resource for freelance healthcare professionals such as midwives, helping them to find more comprehensive support services for women in specific problem situations. In the case study mentioned below (Fig. 1, *"A Woman in Financial Distress"*), the healthcare professional can use ChatGPT, for example, to discover which local contact points may be suitable for further counselling and support services. However, it is important to note that the currently available version of ChatGPT cannot generate accurate addresses. Instead, it serves as a guide

to regional networks, helping to identify potential contacts and support services. The addresses listed in Fig. 1 were fictionalised by the chatbot (Deng & Lin, 2022). For reliable address information, official sources, and databases, such as regionally available websites on early support services, should be consulted. In the context of the experiment documented here, a second attempt was conducted in addition to a general inquiry. For this, GPT-4 was given the same task. (OpenAI, 2023). Despite the inclusion of additional information, specifically the input of the web address for the Rostock Parental Guidance 2023 (https://rathaus.rostock.de/media/4984/PINAX-Elternratgeber_2023_AN-SICHT_02.pdf), the task was not correctly executed. This is due to the fact that the current freely available version (GPT-3.5) only has access to a limited amount of data and cannot retrieve additional information from the internet (Deng & Lin, 2022). This also applies to GPT-4 (OpenAI, 2023).

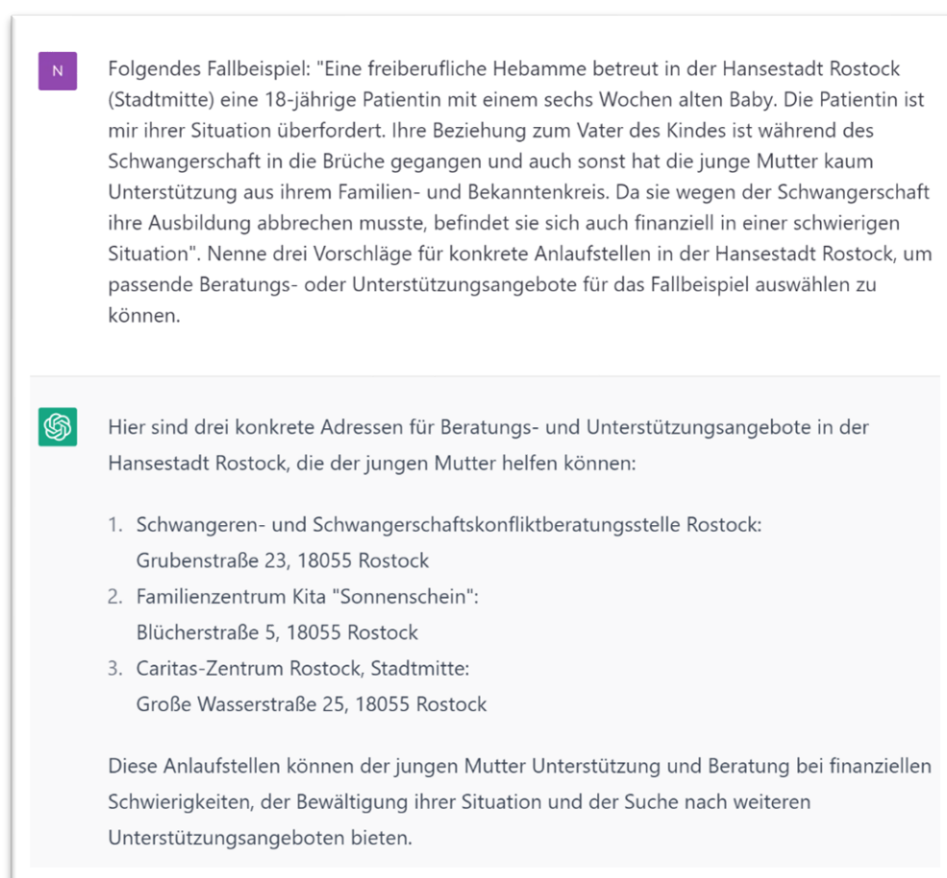


Fig. 1 Chat history: case study 1 – freelance midwife (without additional information)

In the third attempt, some contact information of central providers from the Rostock Parental Guidance was transferred to a Word document and provided to ChatGPT as contextual framework and additional information. Both ChatGPT and Chat GPT-4 (OpenAI, 2023) correctly provided the contact information. The answers were also mostly accurate concerning the professional suitability of

the services offered. This means that the selected counselling centres could be considered for referrals. Interestingly, ChatGPT also added further information to the generated response, regarding potential target groups and the scope of services offered by the provider. Moreover, individually listed addresses for the same provider were informatively summarised, e.g.,): „Es gibt zwei Standorte in Rostock [...]“ (English: "There are two locations in Rostock [...]"). (see Fig. 2, telephone numbers and addresses were obscured by the author).

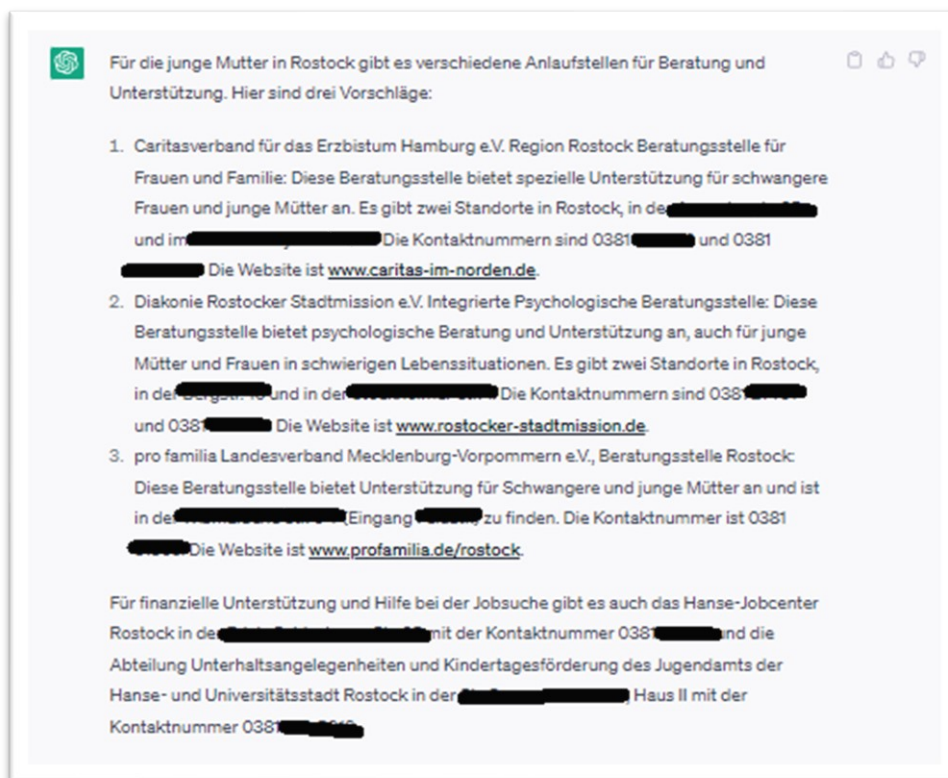



Fig. 2 Answers from ChatGPT: case study 1 – freelance midwife (with additional information)

Case study 2: Registered paediatrician

In the second case study (based on Haas et al., 2022), ChatGPT did not generate any real street addresses. However, the responses provided in Fig. 3 may still be considered as potential contacts in relation to the maternal issues at hand.

N Folgendes Fallbeispiel: "Arthur ist elf Monate alt und seine Mutter ist 22 Jahre alt und alleinerziehend. Sie wohnen gemeinsam in der Hansestadt Rostock, im Stadtteil Dierkow. Bei der kinderärztlichen Vorsorgeuntersuchung (U7) verhält sich die Mutter dem Kind gegenüber eher kurz angebunden, sehr eingeschränkt in der Interaktion und vereinzelt grob. Arthur reagiert aggressiv und verweigert sich in der Folge bei der ärztlichen Untersuchung. Die Kinderärztin macht sich aufgrund dieser Beobachtung Sorgen" Nenne drei Vorschläge, das bedeutet Adressen, für konkrete Anlaufstellen in der Hansestadt Rostock, um passende Beratungs- oder Unterstützungsangebote für das Fallbeispiel auswählen zu können.


 Hier sind drei konkrete Adressen für Beratungs- und Unterstützungsangebote in der Hansestadt Rostock, die der alleinerziehenden Mutter von Arthur helfen können:

1. Familien- und Erziehungsberatung Dierkow:
Kolumbusring 65, 18146 Rostock-Dierkow
2. Sozialpädiatrisches Zentrum Rostock:
Kröpeliner Str. 82-84, 18055 Rostock
3. Frühe Hilfen Rostock:
Rosa-Luxemburg-Straße 17, 18055 Rostock

Diese Anlaufstellen können der Mutter von Arthur Unterstützung und Beratung bei der Bewältigung ihrer Probleme und der Förderung der Interaktion und Bindung zwischen ihr und ihrem Sohn bieten.

Fig. 3 Chat history: case study 2 – registered paediatrician (without additional information)

The output from ChatGPT, as shown in Fig. 4, is significantly improved like case study 1. The suggested addresses or contact points are contextually correct and would also be professionally relevant.

 Als Kinderarzt in dieser Situation könntest du die folgenden Anlaufstellen kontaktieren:

1. Caritasverband für das Erzbistum Hamburg e.V. Region Rostock Beratungsstelle für Frauen und Familie Beratungsstelle für Schwangere - [REDACTED] Rostock oder [REDACTED] Rostock. Beide Beratungsstellen sind unter der Telefonnummer 0381 [REDACTED] oder 0381 [REDACTED] und der Website www.caritas-im-norden.de erreichbar.
2. Diakonie Rostocker Stadtmission e.V. Integrierte Psychologische Beratungsstelle - [REDACTED] 8057 Rostock oder [REDACTED] 8107 Rostock. Beide Beratungsstellen sind unter der Telefonnummer 0381 [REDACTED] oder 0381 [REDACTED] und der Website www.rostocker-stadtmission.de erreichbar.
3. donum vitae e.V. Schwangerschaftsberatungsstelle - [REDACTED] Rostock. Die Beratungsstelle ist unter der Telefonnummer 0381 [REDACTED] und der Website www.rostock.donumvitae.org erreichbar.

Diese Anlaufstellen können der Mutter helfen, ihre Probleme anzusprechen und Unterstützung bei der Kindererziehung zu erhalten. Außerdem können sie gezielte Beratung zu finanziellen, psychologischen und sozialen Themen anbieten.

Fig. 4 Answers from ChatGPT: case study 2 – registered paediatrician (with additional information)

5.2. Overcoming language barriers

In the interaction between professionals and recipients, language barriers, in the form of limited German proficiency, represent one of the most usual challenges (Scharmanski & Renner, 2019, p. 13). With the help of translations into the first language or into easy-to-understand language, this aspect can be addressed using ChatGPT. Furthermore, the topic of easy-to-understand language plays a role, for example, in working with individuals with reading and learning difficulties, dementia, or other impairments. (Bundesministerium für Arbeit und Soziales, 2022, p. 17).

5.2.1 Translation into the mother tongue

The use of AI, particularly language models such as ChatGPT, can optimise the translation of technical terms in everyday work. In healthcare, where language barriers often arise when dealing with patients from various backgrounds, ChatGPT contributes to simplifying communication by facilitating the understanding of medical terminology (Kahambing, 2023). An example is a ward sister in a maternity clinic aiding a mother after the birth of her first child. Using ChatGPT to translate the sentence "You can breastfeed your child as needed" into Spanish results in: "*Puede amamantar a su hijo según sea necesario.*" As a result, the mother receives a clear and precise instruction in her first language, thus providing a better basis for understanding. The application of ChatGPT for translating technical terms contributes to improved communication in healthcare and enables higher quality patient care. Furthermore, the technology eases the work of professionals in various fields by overcoming language barriers, thereby increasing efficiency and accuracy in medical communication.

Advantages of ChatGPT over other online translation tools

As a language model, ChatGPT has several advantages over other online services:

- 1. Contextual understanding:** ChatGPT uses AI and ML to comprehend not only individual words but also the context and meaning of sentences and paragraphs. As a result, translations can be more accurate and reflect the actual intent of the text.
- 2. Complex data set:** ChatGPT is based on an enormous pool of data. This allows it to respond to complex and specialised texts and improve translations accordingly.
- 3. Customisation to the user:** ChatGPT can tailor its responses to the user by incorporating additional information, such as the specific language region. This allows translations to be more personalised and better adapted to the individual situation.
- 4. Multilingualism:** ChatGPT enables translation between various languages. It can also recognise and translate multiple languages within a single text, for example.

5. Storage of translations and additional information: The freely available AI-based tool ChatGPT allows users to save chat histories and label them with individual descriptions. In this way, histories, contexts, and additional information in a specific language or for specific recipients can be continued at any given time. Re-entering this information is not necessary.

5.2.2 Translation into Easy Read

In medical practice, it is essential that patients and their families receive complex diagnoses and information in an understandable manner to make informed decisions and respond appropriately. To achieve this, providing information in Easy Read (Bundesministerium für Arbeit und Soziales, 2022). An example of such a complex diagnosis that may be made after the birth of a child is neonatal jaundice (Berns, 2017). The application of ChatGPT enables an effective translation of neonatal jaundice into Easy Read, for example, to improve communication between hospital staff and patient families. The resulting translation retains critical information and presents it in a form that is more easily understandable for laypersons. For instance, the term "*neonatal jaundice*" was replaced with "*newborn jaundice*", and the "*increased bilirubin concentration*" was explained as "*an increased amount of a substance called bilirubin in the baby's blood*". ChatGPT offers a promising opportunity to enhance communication between hospital staff and patient families by translating complex medical diagnoses, as in the case of neonatal jaundice, into Easy Read. By using ChatGPT, medical professionals can ensure that patients and families receive the necessary information to make informed decisions and act appropriately. Future research can explore the applicability of ChatGPT to other medical diagnoses and fields of expertise.

6. Outlook for practice and research

In summary, it can be concluded that the use of ChatGPT, owing to its AI-based nature, offers numerous advantages. However, when utilising this AI-based tool, limitations must also be taken into account, which manifest in various facets (Deutscher Ethikrat, 2023, p. 180 ff.).

Ethical aspects of using ChatGPT

This AI-based tool should be employed responsibly. For instance, it is crucial to ensure that the information generated by ChatGPT is ethically justifiable and responsibly used to prevent abuse or discrimination. All information entered and retrieved by users through ChatGPT is stored. This must be considered concerning data protection to exclude any potential violation of privacy. As with all AI-based tools, ChatGPT also runs the risk of generating responses with biases or prejudices due to erroneous or incomplete data. Accordingly, it is vital to ensure that ChatGPT has access to a diverse and comprehensive data set to minimise these risks (Alkaissi & McFarlane, 2023; Mattas, 2023; Oviedo-Trespalacios et al., 2023; Tustumi et al., 2023). Further ethical aspects that fundamentally arise from dealing with AI will not be discussed here. A comprehensive presentation is provided, for example, in the Handbook of Artificial Intelligence (Bauberger et al., 2021).

Limitations of ChatGPT

The previously indicated limited data set of ChatGPT can result in queries being answered incompletely or inaccurately. This is not least because the current data of ChatGPT is based only on information up to December 2021. The more recent version, GPT-4, relies on data up until August 2022 (Mattas, 2023; OpenAI, 2023). Regardless, it is essential to note that inaccurate responses can be generated through ChatGPT. For example, ChatGPT, like other AI-supported text generators, tends to fabricate or hallucinate information. This means that it sometimes generates information that is neither based on facts nor reality. These fabrications or hallucinations can manifest in unpredictable ways. (Alkaissi & McFarlane, 2023). The German Ethics Council also pointed out that biases may occur in data processing with AI-based tools, including ChatGPT. These biases may be the cause of the production of stereotypes or prejudices in specific contexts. Likewise, inappropriate or discriminatory responses may occur as a result (Deutscher Ethikrat 2023, p. 185).

GPT-4 versus GPT-3.5

It can be assumed that the responses produced by ChatGPT (GPT-3.5) can be significantly optimised through the development of GPT-4. The latest version was trained with data up to August 2022

and is equipped with additional features. GPT-3.5 was based on data from 2021. In contrast to its predecessor, GPT-3.5, GPT-4 achieves better outputs, for example, measured by academic exams, various languages, and trust in generated responses. Furthermore, the input of information can occur not only through text but also through photos or graphics. This new AI version also draws causal inferences. In general, the use of ChatGPT (GPT-3.5) as well as the newer language model GPT-4 carries risks. According to the developers, these models have the potential to cause both significant societal benefits and harms due to their respective outputs (OpenAI, 2023). Accordingly, the use of these AI-based tools should be subject to continuous critical reflection and professional verification of the provided responses. Further discussions connected to this topic can be found, for example, in Deutscher Ethikrat (2023) and Steiner and Tschopp (2022).

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Conflict of interest

The author states that there is no conflict of interest.

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