# Information regarding mHealth Apps in German Outpatient Mental Health Care: An Interview Study

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## *Abstract*

**Background:** Outpatient mental health care in Germany is facing challenges. Innovative approaches are required to sustain a high quality of care, particularly in light of challenging financial circumstances of the German health care system. Since September 2020, selected mHealth apps, so called Digital Health Applications [DiGA], are reimbursable by the German statutory health insurance. Almost half of all DiGA are focused on mental disorders. DiGA are a low-threshold offering with the potential to improve the care of mental disorders. Utilization numbers show that DiGA have not been fully established yet.

**Objective:** The analysis presented here is part of the mixed-methods study DiGAPsy (“Realizing the Potential of Digital Health Applications in Outpatient Mental Health Care”, funding code: 01VSF22029). The object of our study is a comprehensive analysis of the barriers to the implementation of DiGA in outpatient mental health care. The article primarily focuses on aspects relating to DiGA information and barriers within this field.

**Methods:** Expert interviews were conducted with representatives of relevant stakeholder groups in the area of DiGA, including patients, health care providers, DiGA developers and SHI funds. The interview guidelines were based on a scoping review that had been completed previously. The interviews were audio visually recorded and transcribed. A qualitative content analysis was then performed using MAXQDA.

**Results:** A total of thirteen expert interviews were conducted. Three key themes concerning information-related challenges in the DiGA implementation process were identified: (1) current level of information, (2) improvement of the information status, and (3) information suppliers. Overall, the current level of information about DiGA remains low. While the general population is largely unfamiliar with DiGA, most health care providers are at least somewhat aware, though their knowledge tends to be superficial. For health care providers, product-specific information, particularly concerning clinical evidence, is viewed as highly important. Information suppliers also play a critical role. For example, DiGA developers are intrinsically motivated, but the information they deliver is often met with skepticism by health care providers.

**Conclusions:** The findings highlight notable gaps in product-specific knowledge about clinical evidence among health care providers. For the adoption process trusted informations are critical. Addressing these information gaps will be essential for DiGA to establish in German health care, and may help other countries to implement mHealth apps into their health care systems.

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# Information regarding mHealth Apps in German Outpatient Mental Health Care: An Interview Study

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## Introduction

In Germany, outpatient mental health care is facing challenges. There has been a sharp increase in the prevalence of mental health conditions since 2006, resulting in a 146% rise in absenteeism from work between 2000 and 2023 [1]. This is one of the reasons why outpatient mental health care treatments in Germany frequently entail lengthy waiting periods of approximately 20 weeks [2]. Due to the tense financial situation of the health care system, which is e.g., caused by demographic aging combined with medical-technical progress, it cannot be assumed that the situation will be improved by increasing the capacity of psychotherapists alone [3]. Therefore, innovative approaches are needed to ensure a high quality of care in the future.

Since September 2020, selected mHealth applications [mHealth apps] are reimbursable by the German statutory health insurance [SHI]. These mHealth apps are called "Digital Health Applications" (Digitale Gesundheitsanwendungen, [**DiGA**]) and are also known as "apps on prescription". DiGA are medical devices and based on digital technology and can be either a native app or a browser application [4]. Their objective is to support the detection, monitoring, treatment, and mitigation of disorders. For DiGA to be reimbursed by the SHI in Germany, they must be listed in the DiGA-directory. The DiGA-directory contains comprehensive information on all DiGA and is maintained by The Federal Institute for Drugs and Medical Devices (Bundesinstitut für Arzneimittel und Medizinprodukte [BfArM]), which is also in charge of the assessment process, called "Fast-Track" [4]. Within the Fast-Track, DiGA have to prove their positive impact on health care which can either be a medical benefit and/or a patient-relevant structural or procedural improvement. In August 2025, 58 DiGA are listed in the DiGA-directory. Half of them (29 DiGA) are focused on mental disorders, with four of them temporally approved [5]. Temporarily approved means DiGA developers have to provide evidence regarding the positive impact on health care within the first year, while already being listed in the DiGA-directory and being reimbursed by the SHI. In exceptional cases, this period can be extended by another 12 months [4].

As a low-threshold offering, DiGA may have the potential to improve the care for mental disorders. However, despite an upward trend, utilization numbers show that DiGA have not been fully established yet. An estimate by the Techniker Krankenkasse, Germany’s biggest SHI fund, showed that 33% of psychotherapists had prescribed a DiGA in 2023 [6]. This could indicate an unrealized potential in mental health care. One potential explanation for this may be that DiGA and their attributes still remain relatively unknown among the general public and health care providers, which could present a barrier to their wider implementation and effective integration into the health care system [7].

According to Rogers' theory of the diffusion of innovations, providing information is beneficial for promoting the adoption of innovations [8]. As a new care component, DiGA are such. Thus, the primary focus of this article is the informational aspects to promoting awareness and comprehension of DiGA. With regard to information about mHealth apps, Weitzel et al. describe that tailored information for health care providers seem useful to increase the use of mHealth interventions in the treatment of mental disorders [9]. Denecke et al. also describe the need to provide tailored information so that patients can make an informed decision for or against a particular mHealth app [10]. Thus, these two groups (patients and health care providers) need to be addressed in the adoption process. DiGA can be obtained either by prescription from a physician or psychotherapist (in the

following: health care providers) or, with proofed indication, directly from their SHI fund. To date, 87% of all DiGA have been prescribed by a health care provider, while 13% have been obtained directly from the SHI fund [11]. The role of health care providers is therefore particularly relevant as patients trust their judgment due to information asymmetries of treatment options. As a result, health care providers have a proxy role [12].

This article aims to identify which measures could make a meaningful contribution to an optimized use of DiGA in outpatient mental health care and is part of a broader mixed-methods study on the integration of DiGA in mental health care ([DiGAPsy], funding code: 01VSF22029). Further information on the project DiGAPsy can be found in the study protocol [14]. A comprehensive qualitative analysis of the barriers to the implementation of DiGA in outpatient mental health care was conducted [13]. The article focuses on how information-related factors act as barriers to implementation and contributes to the project's overarching research question "What are barriers preventing DiGA from being implemented and used by health care providers and patients both in Germany and internationally?".

## Methods

To analyze the use of DiGA in outpatient mental health care, semi-structured expert interviews were conducted. To present our research, we have followed the 32-item COREQ checklist to provide a complete and transparent picture of our qualitative work [15].

## Theoretical Framework

The aim of the interviews was to identify barriers and hurdles to a more comprehensive use of DiGA and to discuss possible ways to overcome them. The following article will focus on the aspect of information. Major topics of the interviews were the status quo and options for improvement of the information level of both health care providers and patients.

To approach the research question exploratively, qualitative research was applied to collect in-depth and detailed information. In addition, interviews offer the opportunity to react flexibly to responses and to ask questions in case of possible uncertainties gaining a comprehensive understanding of the topic [13].

## Participant Selection

To identify relevant stakeholders for the expert interviews, a preliminary overview search was conducted. Stakeholders representing the interests of health care providers, patients and DiGA developers were identified as well as SHI funds as payers of DiGA. Of the four stakeholder groups, various institutions were contacted by e-mail or telephone. To gain patient perspectives, patient organizations were consulted. Health care providers were represented by the respective Chambers (Ärztekammern) and Associations of SHI Physicians and Psychotherapists (Kassenärztliche Vereinigungen). Representatives from SHI funds and DiGA developers were also included. Interviews targeted employees involved in DiGA or psychotherapeutic care to leverage their expertise.

## Setting and Data collection

The interviews were conducted online via Microsoft Teams. The recordings were transcribed using the four-eyes principle. The expert interviews were conducted by two researchers (KH, CA) who already had experience in the organization and conduction of qualitative research. KH is a scientific associate and CA is head of the research team. Both are working at the Institute of Health Care Management and Research at the University of Duisburg-Essen. KH is a PhD student and male, CA holds a PhD and is female. Both have a (health-) economic background. Both state that they don’t have a conflict of interest and neither a clear stance for nor against DiGA. No third parties took part in the interviews. The interviews were audio-visually recorded.

KH knew the participants of the interviews from the organization of the appointments, CA had already been in contact with two of them in a previous research project. There was telephone and written contact for the organization of the interview appointments. At the beginning of the interviews, the moderators briefly introduced themselves. They described their professional position and experience. The interviews were conducted using a semi-structured interview guide based on the results of a previous conducted scoping review (Appendix 1). The same topics were discussed in all interviews, but the wording of the questions was adapted to the specific target group in order to obtain more specific answers. Participants did not know the questions in advance and responded

spontaneously. During the interviews, the moderators made notes on possible follow-up questions and specific questions to the participants' statements, which were asked either immediately or at the end of the interview. Since the experts were chosen based on their position, socio-demographic information such as age and sex are not provided, as they were not important for the participant selection.

## Data analysis

The interviews were analyzed using the MAXQDA software (VERBI) based on Kuckartz's methodology [16]. Data analysis took place in November 2023. In order to ensure the confidentiality of the statements, the transcripts were pseudonymized, ensuring it is no longer possible to identify the interviewed stakeholder. The transcripts were not subsequently made available to the participants. For the analyses, deductive codes were initially created based on the interview guide and included the topics outlined in the guideline. Where possible, statements were grouped into categories based on their content. Whenever this was not feasible, inductive codes were employed to categorize the statements. Subsequent to the conclusion of the preliminary coding phase, which was undertaken by PR, a second phase of coding was initiated by KH and CA, incorporating the inductive codes that had been introduced (Appendix 2). Discussions between KH and CA were held regarding statements that were challenging to categorize. Subsequently, the stakeholder statements and codes were organized into a matrix, with deductive codes positioned horizontally and inductive codes vertically.

## Ethical Considerations

This study is part of a larger research project, called DiGAPsy. The project was advised and approved by the Ethics Committee of the Medical Faculty of the University of Duisburg Essen (23-11209-BO). Participants received a financial incentive.

## Results

A total of 14 participants were recruited for the interviews, resulting in a total of 13 interviews, with one double interview. The interviewees represented the following groups: Health care provider representatives (5), SHI representatives (4), DiGA developer representatives (4) and a patient representative (1). The interviews were conducted between October and November 2023 and lasted between 52 and 82 minutes. An overview is provided in Appendix 3.

The results reflect the experts' perspectives on DiGA for outpatient mental health care. Opinions and statements regarding the information on DiGA were grouped into the three main categories “current level of information”, “improvement of the information status” and “information supplier”. These and the subcategories in which the results are grouped into are presented in Figure 1 and will be described in the following section.

Figure 1: Aspects relating to information on DiGA

## Current Level of Information

The majority of experts indicated that the level of information of relevant stakeholder groups regarding DiGA remains relatively limited and a low level of information may be one of the reasons why DiGA have not been fully established in the health care system yet.

Health care provider representatives indicated that they were aware of the existence of DiGA. However, they claimed their knowledge to be only superficial with no in-depth knowledge. This opinion was endorsed by DiGA developer representatives.

*"The proportion of doctors who have really internalized DiGA for themselves and use it, regardless of psychology, but psychology is of course the biggest indication, is still vanishingly small." DiGA developer representative*

Both health care providers and DiGA developer representatives indicate that a lack of comprehensive information and introduction to DiGA results in uncertainty, which in turn impedes health care providers' ability to prescribe DiGA.

*“I think that is the main hurdle, that we are just not informed enough.“ Health care provider representative*

To be included in the DiGA-directory, DiGA developers need to provide evidence regarding a positive impact in health care. Health care providers desire DiGA-studies with a high level of evidence, but are skeptical about the quality of existing studies and the ability to transfer their results into the reality of care. DiGA developer representatives reported high standards of criteria that need to be met in their studies.

*“Yes, so we need more, even more knowledge about how the apps work in the real world. The studies with a small group of subjects at the university who are then selected or who report under certain conditions is certainly something different than if you suggest it to patients who may already have an indication for psychotherapy and then use it until the waiting time is bridged. We have virtually no data on this yet.” Health care provider representative*

Interviewees indicated that the extensive range of different DiGA for the same indication made an overview time consuming. This makes implementation more difficult because the initial workload is perceived as high and overwhelming by health care providers.

*“And especially if you now imagine that 50% of DiGA go into the psych field, then I can't expect psychotherapists, to be informed about all DiGA.” Health care provider representative*

The DiGA developer representatives indicated that patients possess less information than providers. This was also reported by the patient representative, who suggested that patient involvement in the development process could address this discrepancy. While there has been a favorable advancement, it is still in an early stage of development.

*"The majority of the population still has no idea what a DiGA is." DiGA developer representative*

## Improvement of the Information Status

The perception of a low level of information led to consideration of how to achieve a higher level of information among the relevant stakeholder groups. Several options for achieving this goal have been described which can be split into two fields. First, general offerings to increase awareness of DiGA in general. Secondly, information offerings on a product-specific level with the aim of increasing awareness of one DiGA in particular.

### General Information Offerings

DiGA developer representatives indicated that this process is costly due to the numerous parties involved and emphasized the necessity for action at the societal level.

*"As a society, we have to think about what we want. And if we say we want this, then we have to accept certain consequences." DiGA developer representative*

According to the developers, the aim should be to reduce uncertainty and create trust in the quality and benefits of DiGA. As a result, health care providers would no longer feel that they need to look too closely at the characteristics of individual DiGA, which is described as a current barrier.

*"And to provide good information about DiGA, and also to address the issues of privacy and evidence, for example, at some point, to get involved in these processes and to communicate them so that not every health care provider feels that they have to look behind the scenes themselves." DiGA developer representative*

Representatives of health care providers described the importance of informing about the different types of the approval process and the different evidence bases required. They suspected that quality deficits exist in the temporally approved DiGA.

*"Then it would certainly be important to provide information about this, and also to say that there are also some DiGA that have really good evidence." Health care provider representative*

Furthermore, health care provider representatives indicated that psychotherapists encounter specific challenges with the prescribing process.

*"However, psychotherapists are not typically involved in issuing prescriptions. This is a long-standing practice that they are not familiar with." Health care provider representative*

**Continuing Medical Education**

Health care providers participating in outpatient care, which is reimbursed by SHI in Germany, are required to undergo continuing medical education. Health care provider representatives stated that such offers could be used to educate and raise awareness of DiGA.

*"So there are training courses on digitization that can be widely distributed, you can say we're doing a training course on how to use DiGA in psychotherapy, how to use them, but you can't focus an individual DiGA." Health care provider representative*

The possible content of such training courses was also discussed. In the experts' opinion a focus should be on the organizational framework and the content of DiGA. This is important because many health care providers don't have much knowledge on these topics, even though DiGA have been part

of the health care system for four years.

*“Just explaining to doctors what a DiGA is, how it is structured, how it works and how the prescription process works. I think a lot of times the problem with doctors is just that it's something new, they can’t really grasp it.“ DiGA developer representative*

**Directories**

It was highlighted that there is a need to adapt the DiGA-directory at the BfArM in order to provide additional information. In particular, the directory structure has been criticized in the interviews for not being very user-friendly. The developers described this as problematic, and that these problems exist mainly in the information hierarchy.

*“So, it's not designed for usability, that's what I'm getting at, it's just that all the information is crammed in there and it somehow works if you have time to deal with it.” DiGA developer representative*

Similar criticism was voiced from the SHI representatives. The existing directory is problematic because information cannot be found quickly.

*"If you imagine you have a full waiting room, then he can’t go to the DiGA-directory and filter for mental disorders and take a look - that's not possible." SHI representative*

Besides the DiGA-directory, the option of developing further independent directories was discussed. One expert mentioned that a set of information could be defined.

*"And that probably requires a standard set of information that defines how I, as a practitioner, can tell if this is helpful or not." Health care provider representative*

As a result of this structuring, comparability would be facilitated. This could reduce uncertainty by making it easier to compare DiGA.

*"But actually, of course, I would prefer to have a relatively highly structured information framework based on certain criteria and thus be able to establish comparability between DiGA." DiGA developer representative*

It was also discussed that information needs to be more easily accessible than it currently is in the DiGA-directory. This could maximize the benefit, as it would allow quick handling. In this context it was also described that a rating system could be useful.

*"How can the general practitioner who has 30 seconds quickly see what the best option is? You could set up a rating system with feedback from users or something like that, just like you do with Google, when you're thinking about which table to buy, you look to see what other people are saying." SHI representative*

## Product-specific Information

In addition to a general increase in the level of information on DiGA, the possibility of product-specific information was discussed. As health care provider representatives were critical of general information offerings, they expressed a desire for product-specific information. One expert said that in addition to general information, more in-depth and product-specific information is needed for an evaluation.

*„So I believe that, for example, an information campaign for health care providers is not enough if these barriers are not removed.“ Health care provider representative*

DiGA were compared to traditional books, which would also only be recommended if the reader had prior knowledge of the book in question. One expert identified a problem with DiGA: they lack transparency compared to traditional printed books. The programs and their structure are more

difficult to present.

*"Well, if I were to recommend a book to a patient, I would always look at it first. But I can't really take a closer look at the DiGA.“ Health care provider representative*

**Brochures**

The representatives of the health care providers outlined the requirements for product-specific offers in the form of brochures, which could facilitate the development of awareness and initiate an evaluation process.

*„So clearly, as I already said, a concise, well written summary of what a DiGA does, which can be read in not too long time.“ Health care provider representative*

The representatives of the health care providers described that the information material currently sent out by the DiGA developers does not always meet these criteria and that more in-depth information, e.g., on existing evidence, is desired. It was also emphasized to explain the content and structure of the DiGA.

*„It must also be said that the DiGA developers do not provide very comprehensive information. So, when I get a flyer in the office, the product is advertised on three pages, but there is very little specific information. That's not enough for me.“ Health care provider representative*

The patient representative described the requirements for the content by pointing out the importance that the expectations regarding DiGA are appropriate. An example was that it must be communicated that DiGA are only beneficial if the patient is disciplined and uses the DiGA accordingly.

*„This is not a miracle pill, but you now have to work on yourself, it is a new experience and the patients who use it should be informed about this beforehand.“ Patient representative*

Developers described the need to send out information materials to health care providers on a regular basis in order to have an impact. Sending the material once would have no effect, and only a consistent approach could actually increase the level of familiarity among health care providers and thus reduce resentment.

*„And what we've also found is that it doesn't help much to do it just once, but that it's important to keep sending out materials, and then the interest comes back again and again.“ DiGA developer representative*

**Information Events**

Developers reported the established approach of promoting their DiGA at their own events. In these events, which may be included in the aforementioned Continuing Medical Education, developers of DiGA present the product in a comprehensive manner. This way, product-specific information can be provided to interested health care providers.

*„To explain how the whole thing works-, we offer information events for doctors who are interested, at regular intervals, that we simply explain to the doctors what a DiGA is, how it is structured, how it works.“ DiGA developer representative*

**Trial Access for Health Care Providers**

Trial access for health care providers were discussed critically in the interviews. In general, the opinions were positive. In the reality of care, it seems to be common practice to grant trial access to health care providers. The resulting transparency was viewed positively as the lack of information has a deterrent effect.

The provision of trial access was identified by developers as a crucial aspect of their contribution to the adaptation process, which is necessary to facilitate the implementation of DiGA. One developer

representative stated that trials are an important marketing tool and a way to promote their own product.

*„And I think that's the best advertising you can do, to actually give a physician the opportunity to see the program and experience it from the patient's point of view." DiGA developer representative*

However, critical views were also expressed by DiGA developer representatives. Several arguments against opposing trial access for health care providers were presented. One was that DiGA are designed to work for a sick patient, not to please health care providers.

*"That's the famous bait that has to taste good to the fish and not to the fisherman, that is - and then the doctor comes along and says, hmm, and then he tries to put himself in the patient's shoes somehow, it just doesn't work." DiGA developer representative*

As an alternative to trial access, it was suggested that products should be developed that are highly usable so that the benefits can be obtained without taking up the time capacity of health care providers.

*„You need products that are brutally simple, they have to be as easy to use as a drug or they won't fly." DiGA developer representative*

**Trial Access for Patients**

The possibility of offering trials to patients was also discussed during the interviews. The SHI funds were open to the proposal. It was seen as an easy way to provide transparency.

*„Perhaps also for the insured, so that they can simply see what the product actually is, i.e. get to grips with it." SHI representative*

Developers were critical of the suggestion. One concern expressed by developer was that establishing patient trials could have an impact on reimbursement. Given that DiGA may exert an influence at an early stage of the utilization process, it was concluded that this benefit would not be adequately reimbursed.

*„No. In our opinion, that is a very strange suggestion. Because this is a medication, and we cannot give the DiGA before clarifying contraindications and indications. […] And our product should be reimbursed from hour zero, just like other drugs. So that's a suggestion that we as a developer can't go along with, that it makes sense or is right in any way." DiGA developer representative*

## Information Suppliers

Besides the current level of information and the different ways in which the information status could be improved, different information suppliers were discussed in the interviews.

**DiGA Developers**

The DiGA developers themselves were the most controversial discussed information suppliers, as each interviewed group had a differentiating opinion. For the DiGA developers, the provision of information was of great importance as it is a relevant part of marketing. In the interviews, representatives of the DiGA developers said that their information offerings are focused on health care providers, as they believed this to be a more efficient use of resources than focusing on patients.

*„For us, it's also a little bit of a resource issue whereby we have to look at how we can use the manpower or resources that we have wisely. We are working more with doctors right now." DiGA developer representative*

However, many DiGA developers are small companies. In contrast to large corporations, such as pharmaceutical companies, smaller organizations have limited their resources to supply information.

*"Companies can't do it on their own, because we're not talking about big pharma with their own*

*sales force and tens of thousands of employees, we're talking about startups that have 50 people or ten people and they can't do sales on top of that." DiGA developer representative*

The health care provider representatives were particularly critical of this way of information supplier as they perceived the information sent not to be objective.

**SHI Funds**

The SHI funds were another discussed supplier of information. There was hope on the side of the developers that the SHI funds could become more involved in providing information about DiGA, as they saw the necessary capacity at the SHI to make DiGA known to the insured.

*"I would like to see this need for information addressed not only by the developers, but also by all those involved, and that would explicitly include SHI funds and the chambers, but as I have already said, they have little desire to do so, but actually it is their duty." DiGA developer representative*

The SHI funds themselves described factors regarding information supply that need to be considered. SHI funds are required to be objective when providing information. This means that only general and no product-specific information may be provided.

The general neutrality of the SHI funds with regard to DiGA was questioned by the developer representatives. It was described that it sometimes happened that instead of DiGA, the SHI funds' in-house products were advertised. Some of these products are relatively similar in design to DiGA, which creates a competitive situation. In the course of the interviews, SHI fund representatives conveyed this reserved opinion on DiGA, the basis of which was largely the high prices of DiGA.

*"For example, we could mobilize our call centres. And if we get a call from somebody who needs mental health counselling somewhere, we could say, look here, there's a DiGA in this area, check it out. But we don't do that and no SHI fund will do that because of the prices, because of the high prices. Maybe also because there are similar products, which might also play a role." SHI fund representative*

**Physicians and Psychotherapeutic Chambers**

The medical and psychotherapeutic chambers are another possible information supplier discussed in the interviews. The representatives of the health care providers in particular were open to this option. However, the chambers themselves described that they have to maintain a neutral role and, like the SHI funds, cannot provide product-specific information about DiGA. They saw themselves in the role of those who issue warnings when there are dangers posed by a DiGA.

*„If we have a reason, for example if there is imminent danger, or if we see that there is a DiGA and patients are suffering, then we can intervene. But we can't do training on a single DiGA." Health care provider representative*

**Associations**

Professional associations were also discussed as information supplier. Developers and health care providers agreed that these associations are in a good position to increase awareness of DiGA. They have well-established information channels, which are well received.

*„I believe that the professional associations in particular must play an important multiplier role here." DiGA developer representative*

Health care provider representatives described how these associations played a key role in previous system changes. They were described as having a high level of expertise and the necessary capacity to carry out these analyses.

## Discussion

This article examines the role of information in the implementation process of DiGA. The low level of information regarding DiGA is one problem, which prevents DiGA from being used by health care providers and patients. The article considers strategies for enhancing awareness for DiGA, whilst simultaneously addressing questions that are relevant to the subject. Strategies with the aim to improve the information status were presented. A distinction can be made between general and product-specific information. Another discussed aspect is the information supplier, as it is highly relevant to the topic.

Looking at the existing literature, it is evident that there are research gaps in the use of DiGA, especially for DiGA targeting mental disorders [14]. Two things should be noted here. Germany was the first country to include mHealth apps into regular care. This reduces the number of relevant international studies. Furthermore, DiGA are only reimbursable since 2020. Consequently, there is a limited number of completed studies in this field.

Existing publications focus on sub-areas of outpatient (mental) health care, such as primary health care. There is literature on the knowledge of DiGA and the existing level of information, but it does not focus on mental disorders. However, the available literature is at least partially applicable to the results presented here and states that insured individuals typically possess limited knowledge about DiGA. For example, a representative survey study found that only 43% of Germans were aware of DiGA [17].

A similarity to the presented results can be seen when comparing the literature regarding the level of knowledge of health care providers. For example, in a survey of physicians conducted by one of the largest German SHI fund, the majority of respondents indicated that they were aware of DiGA, but only about a quarter rated their level of information as “good” or “very good”. More than 80% agreed, at least in part, that information about individual DiGA was inadequate [18]. A survey of general practitioners by Wangler and Jansky showed that a total of 87% of respondents stated that they were aware of DiGA, but only 22% are confident in their ability to advise patients on the topic [19]. No finished studies could be identified in which only psychotherapists were asked regarding the topic. Assuming that health care providers are indeed aware of DiGA, the level of knowledge about DiGA can be described with the help of Rogers' "Diffusion of Innovation Theory" which provides a framework of five phases for understanding how new technologies spread within a population, focusing on factors that influence adoption [8]. According to the theory, the five phases of adoption and different types of information are needed depending on the phases. The initial "knowledge phase" is primarily concerned with fostering a basic awareness of the innovation in question. The subsequent “persuasion phase” hinges upon the dissemination of more comprehensive information. In the “decision phase” a decision for or against the innovation is made. The fourth stage is the implementation stage, followed by the confirmation phase. Especially the first three phases of this process are characterized by incomplete information, which creates uncertainty due to no or little prior experience with the innovation. In accordance with Rogers' theory, the health care providers have progressed beyond the initial knowledge phase and are currently engaged in the second or third stage, the persuasion or decision phase, during which a positive or negative opinion is formed [8]. Therefore, it appears inadvisable to focus solely on raising awareness during this stage of the adoption process and shows the necessity to consider other factors prior to proceeding.

A topic that was frequently discussed in the interviews, particularly by representatives of health care providers, was the skepticism towards temporally approved DiGA, given the perceived deficiencies in the available level of evidence. In a nationwide survey of health care providers they expressed a desire for a high level of clinical evidence, as this was considered the most important factor influencing attitudes towards DiGA [20].

Another discussed topic in the interviews was further education for the health care providers. In a quantitative study by Wangler et al., systematic further training in this area was seen as one of the most suited approaches to facilitating the integration of DiGA. A total of 56% (n=546) of the physicians surveyed saw this as a promising approach [19]. However, it is important to acknowledge that educational events are frequently organized by DiGA developers, which results in a degree of skepticism from representatives of health care providers.

It was suggested that trial access could be a way of increasing the level of knowledge. In the aforementioned nationwide survey of health care providers, the absence of testing options was identified as a significant barrier [20]. The German Society for Internal Medicine considered unrestricted access to test accounts for physicians to be important [21]. In the context of Rogers' model, product-specific information is used in the third phase (decision phase), in which a positive or negative opinion is formed about the innovation. During this phase, individuals actively seek additional information that will enable them to conduct their own analysis of the innovation, which could be realized by trial accesses [8]. However, although the option is comprehensible at first glance, it presents difficulties. A trial access would create the possibility for precise analysis of the DiGA by the respective health care provider. One disadvantage of this approach is that a product-specific analysis is a time-consuming process. In order to get a comprehensive overview, all DiGA in the indication spectrum would have to be analyzed. This has to be seen in the context that outpatient health care providers already have to cope with a high workload [22].

This implies an important role for professional associations. They have a high level of trust among health care providers and have the necessary competencies to conduct such analyses. Rogers' theory suggests that the information supplier has potential. Following Rogers, most innovations are not evaluated on the basis of scientific results, but on the basis of the experience and evaluation of the environment that has already adopted the innovation. These proxies can have a decisive influence on the decision-making process [8]. Given the reservations expressed by professional associations about DiGA, it seems probable that it will take considerable time before DiGA may become established in the health care system.

## Limitations

There are some limitations regarding this analysis that need to be taken into account. The number of experts included in the analyses is limited. This means the topic has not been covered from all possible perspectives. Nevertheless, we have made every effort to be as comprehensive as possible in our pursuit of information saturation. Furthermore, the views and experiences of the included experts may not reflect the full range of the issue. This means that the insights gained are specific but may have limited representativeness. A further limitation is the utilization of semi-structured interviews. While these interviews provide a framework for discussion, interviewees are not entirely at liberty to express their thoughts without the influence of the guided questions. However, this limitation is accepted due to the advantages it offers. Also, it is worth noting that the number of included representatives of the stake-holder groups was not equal.

Furthermore, it should be mentioned that the interviews were conducted in German. The quotes used are therefore translated, which may lead to at least partial changes in meaning. Also, another factor to consider is that DiGA is a German concept. The framework conditions for mHealth apps may be different in other countries, which may lead to different requirements [23]. In addition, a law was passed in March 2024 that changed the framework conditions for DiGA in the German health care system in terms that DiGA can also be offered in higher risk classes which, until now, does not apply to DiGA in the indication of mental disorders.

## Conclusion

This article offers insights into the opinions of experts on the topic of information regarding DiGA in German mental health care. In semi-structured interviews, experts discussed the current level of information about DiGA, strategies to improve the current information status and possible information supplier. As a low level of knowledge can hinder the use of DiGA, the consideration of the results can help to find ways to improve the integration of DiGA in outpatient mental health care. As this study followed an exploratory qualitative design, the findings should be further explored in additional quantitative studies.

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## Author contributions

All authors were involved in the conception of the study and the study design. KH and CA were the major contributors to conducting the analysis. KH was the main contributor to writing and reviewing this manuscript. All authors contributed to the manuscript in different stages and also read and approved the final version. In order to assist with the translation of the manuscript from German to English, we made use of the large language model ChatGPT (GPT-3.5).

## Conflicts of Interest

None declared.

## Literature


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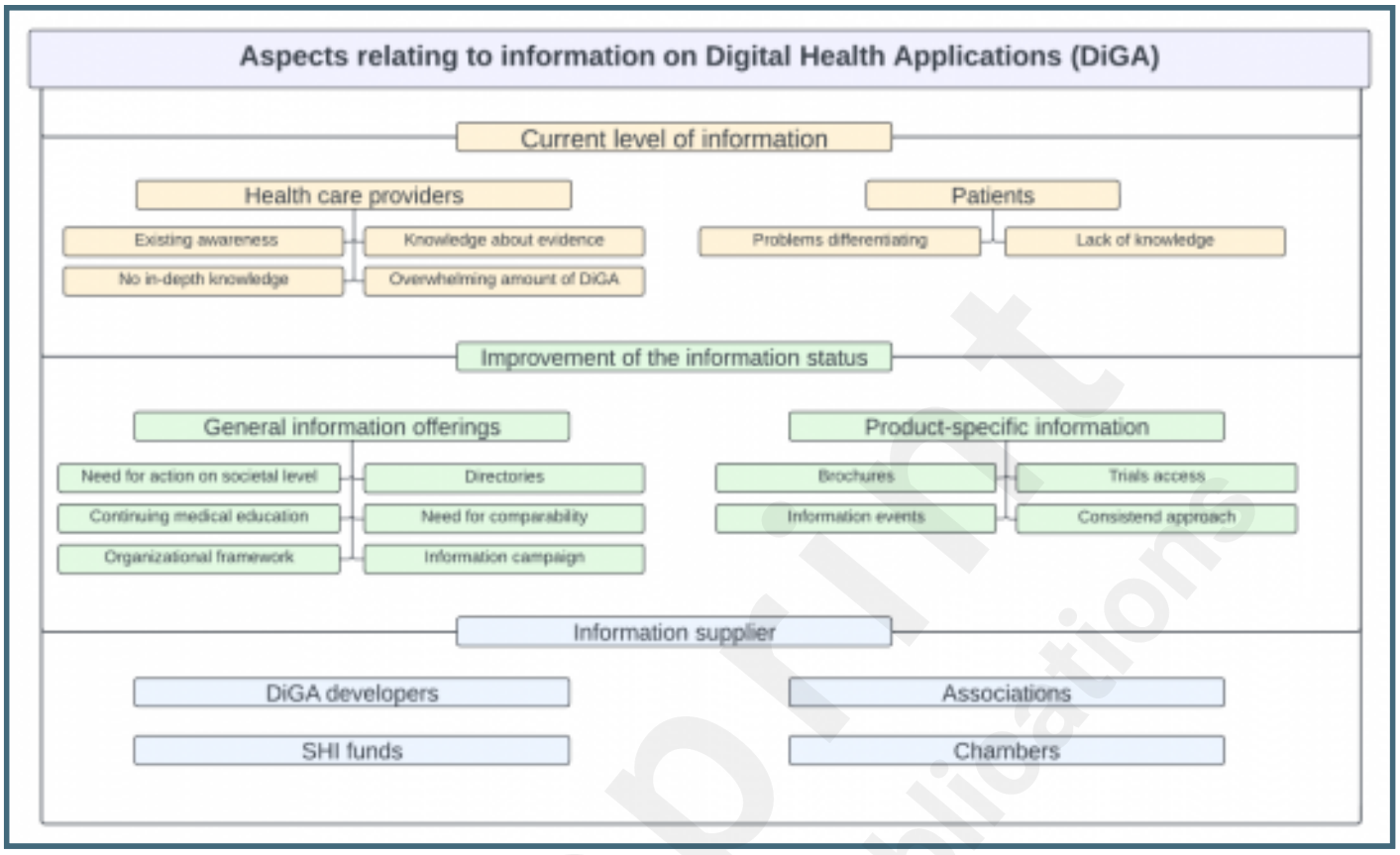
## Abbreviations

| | |
|---|---|
| SHI | Statutory health insurance |
| BfArM | The Federal Institute for Drugs and Medical Devices (Bundesinstitut für Arzneimittel und Medizinprodukte) |
| DiGA | Digital health application (in German: Digitale Gesundheitsanwendung) |
| mHealth apps | Medical health applications |
| DiGAPsy | Realizing the Potential of Digital Health Applications (DiGA) in Outpatient Mental Health Care |

# Supplementary Files

# Figures

Aspects relating to information on DiGA.



# Multimedia Appendixes

Interview Guidelines.
URL: http://asset.jmir.pub/assets/a13a7783afaa385db58ce1fa52b463db.docx

List of Codes.
URL: http://asset.jmir.pub/assets/a434bf8183d7dc4ea5c68a4d0cc2cf8d.docx

Conducted interviews.
URL: http://asset.jmir.pub/assets/85bded3e1944c23c06dee3526bbe3418.docx