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Opportunities and Challenges for Decentralized Clinical Trial Approaches: European Health Technology Assessment Perspective

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ABSTRACT

Objectives: Decentralized clinical trial (DCT) approaches are clinical trials in which some or all trial activities take place closer to participants' proximities instead of a traditional investigative site. Data from DCTs may be used for clinical and economic evaluations by health technology assessment (HTA) bodies to support reimbursement decision making. This study aimed to explore the opportunities and challenges for DCT approaches from an HTA perspective by interviewing representatives from European HTA bodies.

Methods: We conducted semistructured interviews with 25 European HTA representatives between September 2022 and February 2023, and transcripts were analyzed after thematic analysis.

Results: Two main themes were identified from the data relating to (1) DCT approaches in HTA and (2) trial-level acceptance and relevance. Experience with assessing DCTs was limited and a variety of knowledge about DCTs was observed. The respondents recognized the opportunity of DCTs to reduce recall bias when participant-reported outcome data can be collected more frequently and conveniently from home. Concerns were expressed about the data quality when participants become responsible for data collection. Despite this challenge, the respondents recognized the potential of DCTs to increase the generalizability of results because data can be collected in a setting reflective of the everyday situation potentially from a more diverse participant group.

Conclusions: DCTs could generate relevant results for HTA decision making when data are collected in a real-world setting from a diverse participant group. Increased awareness of the opportunities and challenges could help HTA assessors in their appraisal of DCT approaches.

Keywords: decentralized trials, generalizability, patient centricity.

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Introduction

Once a new drug is approved by authorities such as the European Medicines Agency based on a positive benefit-risk profile, it requires national-level reimbursement to ensure patient access. Health technology assessment (HTA) bodies evaluate the clinical and economic value of health technologies based on evidence from clinical studies and provide recommendations on whether they should be integrated into the national healthcare system.[1,2]

Digital health technologies (DHTs), such as wearables and mobile applications, are increasingly being used in clinical research.[3,4] These technologies may allow for the collection of trial data closer to the real-world setting. In addition, DHTs and other innovative trial activities may change the way clinical trials are conducted, enabling "decentralized clinical trial" (DCT) approaches.[5–9] DCTs are an operational approach to clinical trials in which some or all of the trial activities are organized at the participant's home or other local settings, instead of the investigative site.[10] In full DCTs, trial participants are not required to visit the investigative site at all. DCT approaches may be used for efficacy trials or could be steered more toward a pragmatic trial methodology to collect real-world evidence (RWE).[10]

DCT approaches have the potential to address issues in the conduct of clinical trials, including low recruitment and retention rates and a high participation burden. Furthermore, DCT approaches aim to collect data in a setting and population that is representative of the real-world setting in which the intervention will be used, which could benefit HTA decision making. In general, understanding how innovative trial approaches are perceived by HTA bodies is important because evidence from these trials is used in their evaluations. The perspective on DCT approaches from HTA bodies has not been assessed before. Therefore, the current study aimed to identify opportunities and challenges for DCT approaches to support HTA decision making from a European HTA perspective.

Methodology

Study Design

In-depth, semistructured interviews with 1 to 2 representatives from a European HTA body were conducted to solicit comprehensive opinions and experiences. Semistructured interviews allowed for discussing predefined topics, while maintaining flexibility to elaborate on topics raised by the respondents.[11] The consolidated criteria for reporting qualitative research were used to report on the methodology and results.[12]

Interviewee Eligibility and Outreach

Potential participants from European HTA bodies that focus on the assessment of pharmaceutical products were identified through the EUnetHTA network (Joint Action 3 member organizations)—a network for HTA organizations across Europe.[13] In addition, potential participants were identified through the research team's network and snowballing, seeking geographical and expertise diversity. The outreach and inclusion were aimed at pharmacotherapeutic and pharmacoeconomic assessors, as well as methodologists, statisticians, and those in coordinating or advisory roles. Potential participants were approached via email and were cordially invited to participate through a standardized information letter from September 2022 to January 2023.

Development of the Interview Guide

The interview guide was based on previous research[14] and included the following topics: (1) general perspective on DCTs, (2) data collection procedures and acceptability of DCT data, (3) recruitment and representativeness of participants in DCTs, (4) impact of COVID-19, and (5) training material. The interview guide was validated through peer review within the research team and by an HTA representative. In addition, the interview guide was piloted by interviewing 3 representatives from the Dutch National Health Care Institute (Zorginstituut Nederland). The final interview guide is provided in the supplementary information (Appendix 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2023.11.006). Data from pilot interviews were included in the final analysis, given that only minor changes were made to the interview guide (ie, redundant probes regarding data collection setting and recruitment strategies were left out).

Data Collection

Semistructured, 1-hour interviews were conducted online via WebEx in Dutch or English by 1 or 2 interviewers (A.J.d.J., N.S.) from September 2022 to February 2023. Before the interview, the participants received the informed consent form and a concise interview guide. In addition, the interviewees were asked to complete a preinterview questionnaire to collect information on their role (ie, pharmacotherapeutic assessor, pharmacoeconomic assessor, both, or other role), years of experience with HTA (0-4, 5-9, and ≥10 years, respectively), the region of HTA body (Northern Europe, Southern Europe, Western Europe, and Eastern Europe,[15] respectively), and the types of products that are evaluated by their HTA body (ie, pharmaceuticals, nonpharmaceuticals, or both). After the interview, summaries were shared with the respondents to ensure correct interpretation. Data were collected until no new (sub)themes emerged from the interviews, ensuring comprehensiveness of respondents' perspectives in the data.[16] Participants were encouraged to share their perspectives and did not participate on behalf of their HTA body.

Data Analysis

Interviews were audio recorded, transcribed verbatim, and pseudonymized. Data were analyzed through thematic analysis using NVivo Pro 12, QSR International (Burlington, Massachusetts).[17] To that end, we familiarized ourselves with the transcript data, inductively coded the data, and discussed and aggregated the codes—based on patterns in the data—into categories and overarching themes. The first 6 transcripts were independently coded in duplicate by 2 researchers (A.J.d.J., N.S.), and discrepancies were discussed and resolved to establish an initial codebook. The remaining transcripts were coded by one researcher (N.S.) and verified by one other (A.J.d.J.) using and refining the initial codebook. The codebook was discussed iteratively within the broader research group.

Ethics

A written electronic and oral informed consent was obtained from the respondents before the interview, which detailed the voluntary participation and the possibility to withdraw at any time without consequence. The study protocol was approved by the institutional review board of the Division of Pharmacoepidemiology and Clinical Pharmacology from the Department of Pharmaceutical Sciences of Utrecht University (UPF2209).

Results

Respondent Characteristics, Experience, and Main Themes

We contacted 137 potential participants and organizations from 27 European Economic Area countries and the United Kingdom of whom 57 responded. Twenty-eight (49%) declined participation because of a perceived lack of expertise (n = 16), time constraints (n = 8), or other reasons (n = 4). We were not able to schedule an interview with 4 respondents (7%). Twenty-five respondents (44%) participated in 1 of the 24 interviews (Table 1).

Thirteen respondents had not heard of DCTs before the interview, whereas others had heard of DCTs, for example, at international consortia, at scientific conferences, or during joint scientific consultations (JSCs). Although 12 respondents mentioned experience with individual DCT activities including remote data collection through electronic participant-reported outcomes (PROs), wearables, and telemedicine visits, none had experience with assessing a full DCT. In line, respondents expressed a need for training material defining DCTs, their (dis)advantages, and specific examples.

The findings were categorized under 2 main themes and the main opportunities and challenges are summarized in Table 2. The first theme explores DCT approaches from a system level and discusses when DCT approaches should be used from an HTA perspective. The second theme focuses on trial-specific aspects that affect the acceptability and relevance of DCT data. Additional aspects regarding remote safety monitoring and participant privacy were mentioned by several respondents, but these were not discussed in-depth and are therefore not discussed under the main themes.

DCT Approaches in HTA

This theme discusses when DCT approaches should be used from an HTA perspective and includes (1) the perceived suitability of DCT approaches as regards the therapeutic areas, interventions, and endpoints and (2) the role of DCTs in the evidence framework and its relation with RWE.

Table 1. Respondent characteristics (N = 25).

Category	Subcategory	n (%)
Role within HTA body	Pharmacotherapeutic assessor	7 (28)
	Pharmacoeconomic assessor	2 (8)
	Pharmacotherapeutic and economic assessor	9 (36)
	Coordinating or advisory role*	11 (44)
Years of experience with HTA	0-4 years	5 (20)
	5-9 years	4 (16)
	≥10 years	16 (64)
Region HTA body†	Northern Europe	9 (36)
	Southern Europe	7 (28)
	Western Europe	5 (20)
	Eastern Europe	4 (16)
Remit of HTA body	Pharmaceuticals	12 (48)
	Nonpharmaceuticals	2 (8)
	Both	11 (44)

HTA indicates health technology assessment.
*Including (department) directors, methodologists, statisticians, and a digital health technology expert. Four respondents combined a coordinating or advisory role with an assessor role.
†HTA bodies from Austria, Belgium, Czech Republic, Estonia, Finland, Hungary, Ireland, Italy, Malta, The Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.

Perceived suitability

DCT approaches were considered appropriate when the disease and intervention can be self-managed (eg, chronic diseases), when more participants must be reached across a large geographical area (eg, orphan diseases), and when devices and diagnostics are available to measure endpoints remotely. Biomarker outcomes (eg, blood glucose, blood pressure, heart rate) and (electronic) PROs were frequently mentioned in the context of remote data collection. According to the respondents, opportunities for quality of life outcome measures included more frequent administration, less influence of recall bias, and better reflection of the "everyday situation" in at-home settings than in conventional clinical trials. However, endpoints or diagnoses that can only be obtained at a clinic or require physical examination (eg, progression-free survival) could limit the DCT approach. Nonetheless, several respondents mentioned that hybrid DCTs could be an opportunity when full DCTs are not appropriate. Because of in-clinic outcome assessments and the complex route of drug administration, several respondents considered oncology the most challenging therapeutic area to evaluate using a DCT approach. One respondent explained this as follows:

> *For me, it's quite hard to imagine any interventional design for trials being conducted at home that use traditional medical devices or any kind of medical intervention, including pharmaceuticals. Highly-priced or innovative treatments need the supervision of a medical professional, and I'm not sure how that can be conducted at the home of the patient, although I would be very interested in seeing one. So I'm not saying that it's impossible. It's just hard for me to imagine. Maybe it's because 60% of our submissions are coming from the field of oncology and hematology.* (pharmacoeconomic assessor)

The role of DCTs in the evidence framework

Respondents reflected on the role they see for DCTs in relation to other types of evidence. Several respondents started discussing (biases related to) nonrandomized observational studies during the interviews, indicating they see a strong connection between DCTs and observational study designs or may have a limited understanding of the operational approach of the DCT concept. However, others mentioned that DCTs can allow for randomization, while investigating the real-world setting. Some respondents indicated that DCTs should be regarded as complementary to conventional randomized controlled trials (RCTs). This may be partially due to challenges in comparing results from conventional RCTs and DCTs, as mentioned by others. As one interviewee put it:

> *In HTA, inevitably, we're often conducting indirect treatment comparisons because we don't have direct comparative trial evidence. So one of the issues is that you may have a comparison where you're comparing results from a DCT with the results from a conventional trial, and there will be differences* […]. *So that's going to be quite a challenge, I think.* (Representative involved in a coordinating/advisory role)

Several respondents mentioned that DCT approaches are relevant for (pragmatic) clinical trials when using conditional reimbursement schemes, because DCTs may facilitate long-term data collection. When DCT evidence is used in HTA, early dialogue with HTA bodies and other stakeholders through scientific advice was recommended. One respondent recommended involving a health economist when designing a DCT to facilitate relevant data collection.

Trial-Level Acceptance and Relevance

This theme discusses trial-level factors influencing the acceptance of data generated in DCTs. "Data quality and reliability" considers the completeness, variability, and validation of the data. "Impact of biases" addresses potential biases in DCT approaches. "Generalizability" discusses the potential for increased diversity in DCTs.

Data quality and reliability

Data quality attributes mentioned by the respondents include missing data, variability, and validation of—and trust in—data collection methods. First, DCT approaches were expected to reduce missing data by making data collection more convenient, increasing the willingness of trial participants to contribute to data collection. One respondent stated:

> *Quality of life data is something that could be collected in this way* [in a DCT]. *It is not pleasant if you are in the hospital because you are an oncology patient and you are in a trial and you have had all your medication there and the conversation with the physician, and you also have to fill out that stupid questionnaire with I don't know how many questions. You don't feel like it, you just want to go home. And I can imagine that you think, once you are at home, 'Oh I still have to fill out the questionnaire'.* […] *I can imagine that this could lead to less missing data.* (Representative involved in a coordinating/advisory role)

In addition, digital data collection through wearables and smartphones may enable continuous data collection. Two respondents indicated that DCT approaches may improve retention rates because of reduced participation burden, closer (continuous) monitoring, and potentially more contact via telemedicine.

In contrast, the respondents mentioned that connectivity issues and decreased willingness to fill out recurring PROs could lead to more missing data. One interviewee said:

> *I think you may be more willing as a patient, but that is just a guess, to actively contribute* [in a DCT] *or perhaps not at all. It can go both ways* […]. *You may decide not to check your phone, not to fill in* [a questionnaire] *or you may have to do a test but then don't do it.* (pharmacoeconomic assessor)

Although several respondents mentioned that digital endpoints could be more clinically relevant than in-clinic endpoints, they also stressed the need for validation. Increased variability may be another challenge when data are collected in a "less

Table 2. Main opportunities and challenges identified from the interviews.

Theme	Subtheme	Main opportunities	Main challenges
DCT approaches in HTA	Perceived suitability	• Population: a large geographical outreach allows for conducting trials for orphan indications • Population/intervention: home health visits and the involvement of local healthcare professionals may allow DCT approaches in challenging disease areas • Population/intervention: self-manageable diseases are appropriate to evaluate in a DCT • Outcomes: appropriate biomarkers that can be obtained remotely are available and can enable DCTs	• Population: inability to ensure correct diagnoses/verify eligibility criteria when in-person visits do not take place • Intervention: complex interventions may require assistance from site staff • Outcomes: some endpoints cannot be obtained remotely (eg, progression-free survival)
	The role of DCTs in the evidence framework	• DCT approaches may allow for long-term follow-up • Early dialogue with stakeholders and involvement of HTA bodies when designing a DCT	• The concept of DCT is sometimes confused with observational study designs • Different ways of conducting trials (including DCT approaches) may influence the comparability between trials
Trial-level acceptance and relevance	Data quality	• Less missing data compared with conventional trial approaches because of increased convenience for trial participants • Continuous/frequent data collection • PRO data reflective of the everyday situation • Passive data collection increases trust in the objectivity of the data collected	• More missing data because of decreased participant motivation over time • Increased variability in the results because data are collected in a less controlled setting
	Impact of biases	• Reduced impact of the Hawthorne effect (ie, behavior change because participants know they are observed) and recall bias (incorrect or lack of recollection when self-reporting outcomes)	• Participant behavior may be affected when outcome data are available to participants (eg, when using wearable devices) • The time of collecting self-reported outcomes is not predefined and is affected by participant's condition
	Generalizability	• Increasing trial accessibility and recruitment of a diverse trial population • Cost-savings and large geographical outreach allow for the collection of local data	• Exclusion of digitally illiterate people and those who are not able to perform certain self-measurements required for the study

DCT indicates decentralized clinical trial; HTA, health technology assessment; PRO, participant-reported outcome; RCT, randomized controlled trial.

controlled setting" by participants or local healthcare professionals. In relation, concerns were raised about human errors when participants are responsible for data collection. In addition, self-reported information may not be medically confirmed and trial participants may interpret data differently than investigators. Therefore, respondents suggested training participants on what and how to report, involve general practitioners, query the site study staff, and passively collect biomarker data through wearable devices.

Impact of biases

The risk of bias may increase uncertainty and affect HTA. DCTs were expected to reduce recall bias because data are collected closer to the event and the "Hawthorne effect"—a change in behavior because participants know they are being observed—because data collection occurs at home, in a setting reflective of the real world. In contrast, several respondents argued that participant knowledge of outcome data may bias trial results if it leads to a change in behavior. One interviewee explained:

> *If a patient is wearing a device and they can see the outcomes, then they can influence that. So, they may decide to become more active, less active, and so on and so forth.* […] *So that's a concern.* (pharmacotherapeutic and economic assessor)

Nonetheless, another respondent argued that feeding back certain data may empower participants, citing an example in which a participant gained more insight into their diabetes. Some respondents furthermore indicated that collecting data at predefined times could limit bias that is introduced when participants can fill out PROs or conduct self-measurements depending on how they feel.

Generalizability

Recruiting a diverse trial population and addressing health inequalities were indicated as a priority for HTA. Some respondents mentioned that DCTs may attract people who are less inclined to participate in conventional clinical trials including less mobile or seriously ill individuals, ethnic minorities, and people who are not able or willing to frequently visit the trial site (eg, people from rural areas and pregnant women), as one respondent explained:

> *To me, the attraction is that they* [decentralized trials] *are going to include a more representative population or include subgroups that are traditionally excluded from clinical trials.* (pharmacotherapeutic and economic assessor)

However, other respondents were more reserved and mentioned that eligibility criteria and recruitment strategies—which are not necessarily different in a DCT compared with a conventional trial—affect the recruitment of diverse participants to a greater extent. Respondents furthermore indicated that DCTs may favor certain participant groups based on digital literacy, willingness to use the technology, and access to the technology. Solutions may include training, providing technology, involving a trial buddy, and passive data collection.

In addition, data from trials conducted in the country for which a reimbursement decision has to be made are preferred for HTA. Several respondents mentioned that DCTs could save costs

because of fast recruitment, efficient telemedicine visits, and reduced or no travel costs. Consequently, this could lead to larger or multiple national DCTs.

Discussion

In Europe, national and regional HTA bodies provide recommendations that facilitate reimbursement decisions that are essential to ensure patient access to health technologies including pharmaceuticals. Although the exact scope of HTA bodies varies, they typically evaluate clinical and economic evidence from clinical trials.[1,2,18] Therefore, understanding the perspective of HTA bodies on innovative trial approaches, such as DCT approaches, is essential. This study found that HTA representatives see potential opportunities for DCT approaches including a decrease in missing data and data collection in a real-world setting. However, they also indicated that trial participants may become increasingly responsible for data collection activities, which may be more error prone than on-site data collection. Furthermore, limited familiarity of HTA assessors with DCTs may hamper the appraisal of these trial approaches.

Stakeholders' Perspectives on Decentralized Trial Approaches

Before reimbursement decisions are made, stakeholders, including research ethics committees, national competent authorities, and HTA bodies, evaluate clinical trial applications or clinical trial data. The perspective of these stakeholders regarding DCT approaches has previously been investigated.[14,19,20] In line with the findings of the current research, the impact of the operational approach (eg, participant responsibility to collect data) on data quality has been mentioned before.[14,19] The potential impact on data quality depends on the exact DCT setup relating to the hybrid or fully decentralized approach, but also the frequency of data collection, available assistance, number and type of DHTs used in the trial, and required digital literacy.[10,21-23] For instance, feasible strategies for digital recruitment and follow-up of elderly participants have been described before.[24] In contrast, recent data from a full DCT (CHIEF-HF) shows that almost 1 of 3 patients who were interested in participating in the trial did not have a compatible smartphone or were not willing to wear a Fitbit wearable.[21] In addition, protecting participant privacy is important, particularly in the context of data collection through DHTs. This requires that potential participants should be informed about, among others, the rationale for collecting the data, the data flow and access, and the implemented measures to ensure privacy.[19,25]

DCT approaches may facilitate long-term data collection, which may be preferred when extrapolating results for pharmacoeconomic evaluations.[26] If the effectiveness of a new drug is uncertain, HTA bodies may propose a provisional reimbursement scheme in which the drug is reimbursed provided that more evidence is generated.[27] In this study, respondents mentioned that DCT approaches may facilitate long-term data collection because of increased participant convenience—although complex drug administration and endpoint assessment may require visits to an investigative site.[28]

Evidence to inform HTA decisions should reflect the national context, given that differences in patient populations and healthcare systems may affect clinical outcomes and costs.[29,30] Nonetheless, uncertainties regarding the generalizability of the trial population or a lack of information on certain subgroups are commonly reported in regulatory and HTA assessment reports.[31] In the current study, respondents mentioned that DCTs may allow for the recruitment of a more diverse participant population in terms of mobility, geographical location, and race/ethnicity. For example, online recruitment strategies, telemedicine visits, and at-home data collection may improve accessibility, and involving local healthcare professionals may reduce cultural or linguistic barriers.[32-34] In addition to the national context, DCTs may play a role in global trial conduct. Namely, a large geographical reach may facilitate clinical trials for orphan indications. Nonetheless, the potential exclusion of digital illiterate participants, which may depend on the exact trial setup, may limit trial generalizability.[10,35-37]

Impact of Decentralized Trial Approaches on HTA

Cost-effectiveness analyses compare the costs and consequences of different interventions, such as costs per quality-adjusted life-year.[38] These data can be collected through PROs in clinical trials but there is the risk of potential recall bias, which may require more frequent administration.[39] DCT approaches may facilitate the collection of PRO data through convenient at-home administration, thereby allowing for more frequent administration than on-site administration. Different modes of PRO administration have been extensively studied, and at-home and in-clinic administration have shown to be feasible and able to render comparable results in certain situations.[40-42] Furthermore, PRO data may be more clinically meaningful when they are collected in a real-world setting, as described in the current study.

However, the frequency of administration should be considered to limit PRO fatigue, which may lead to missing data if trial participants are not inclined to complete recurring questionnaires.[39,43] In the current research, some respondents mentioned the potential of reduced willingness to fill out PROs at home (eg, reduced external motivation), whereas others mentioned that greater convenience and passive data collection may increase retention and data completeness in DCTs. To ensure complete data, it is important that participants understand what is expected and are not overburdened—for example, by the digital data collection procedures.[44] Using familiar technologies, simple interfaces, feedback to participants, notifications, and involving participants when designing the trial may facilitate PRO adherence.[44-46]

Future Perspectives

Views regarding the concept of DCT approaches and their relation to RWE varied. We advocate the use of "DCT approaches" to refer to those trial approaches "in which trial activities are designed to take place at, or in the vicinity of, the participant's home, rather than at a traditional clinical site."[10] These approaches can be tailored to single-arm trials and (pragmatic or explanatory) RCTs. Therefore, challenges that are associated with observational research (eg, confounding bias, data quality of healthcare databases) do not necessarily affect DCT approaches.

Familiarity with DCT approaches differs between HTA representatives and regulators.[14] An explanation for this could be that regulators are discussing DCT approaches with sponsors, which is illustrated by the publication of regulatory guidance and recommendations.[32,35-37] Moreover, to develop or discuss remote monitoring technologies that may be used in DCTs, sponsors may obtain scientific advice or start a qualification procedure with regulators.[47] Several recommendations may help facilitate the appropriate use of DCTs for HTA and regulatory decision making. First, experiences with key opportunities and challenges (eg, missing data, diversity, and participant experiences) should be mapped for future DCTs. It should be acknowledged that the DCT approach encompasses different combinations of DCT elements

and ranges from full to hybrid DCT approaches, which should be evaluated case by case. Second, sponsors are recommended to consult stakeholders through early dialogues with HTA bodies and JSCs with regulators and HTA bodies—enabled by the European Union HTA Regulation (EU 2021/2282)[48]—to discuss acceptable DCT approaches and trial endpoints including those needed for pharmacoeconomic evaluation. In addition, JSCs provide a platform to share learnings and develop guidance on the implementation and acceptance of DCT approaches. Third, awareness among stakeholders, including HTA representatives, of DCT approaches is warranted and could be increased through initiatives such as the Trials@Home consortium (https://trialsathome.com/) or the Decentralized Trials and Research Alliance (https://www.dtra.org/).

Strengths, Limitations, and Suggestions for Future Research

This is the first study to examine the perspective of HTA assessors on DCT approaches. Perceived lack of expertise was an important reason to not participate in an interview. Nonetheless, 25 representatives with different expertise from HTA bodies across Europe participated in this study, ensuring broad representation. This research helps to provide a detailed picture of the European regulatory system's perspective on DCT approaches, by building on previous studies.[14,19] A limitation of this study was the difficulty to corroborate certain views with examples because of limited experience. As an example, the respondents mentioned the potential to include a diverse trial population but suggestions to meet this goal were only given to a limited extent, possibly because operational aspects are scarcely evaluated by HTA assessors. Furthermore, the results may only be partially transferable to settings beyond Europe, given the unique regulatory and sociocultural environment that the respondents operate in. Future research projects could provide more insights into the impact of DCT approaches on data quality and their ability to recruit diverse trial populations.

Conclusions

European HTA representatives expect that DCTs generate clinically relevant results when data are collected in real-world settings from a diverse participant group that is trained on how to collect the data, although concerns regarding data quality were also expressed. There is a need to improve awareness of DCTs among HTA assessors to prevent misconceptions that may hamper their use for HTA decision making. Experience with DCT approaches will provide practical information on how the expected opportunities and challenges for DCTs translate into practice. Accordingly, HTA assessors should pay attention to the impact of the operational approach on data completeness, trial population characteristics, and the appropriateness of the (digital) endpoints when evaluating DCT approaches.

Author Disclosures

Links to the individual disclosure forms provided by the authors are available here.

Supplemental Material

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