

# Perceived Barriers to Pediatric Clinical Trials Implementation: A Survey of Health Care Staff

Timothy Ryan Smith (✉ [tsmith@kumc.edu](mailto:tsmith@kumc.edu))

University of Kansas Medical Center <https://orcid.org/0000-0001-9607-8985>

Russell McCulloh

Children's Hospital and Medical Center of Omaha

Minh-Thuy Bui

"Wright Career College"

Natalie Sollo

University of Kansas School of Medicine- Wichita

Carolyn R. Ahlers-Schmidt

University of Kansas School of Medicine- Wichita

Barbara Pahud

Children's Mercy Hospitals and Clinics

Julian A. Dedeaux

University of Kansas School of Medicine- Wichita

Ann M. Davis

University of Kansas Medical Center

---

## Research

**Keywords:** clinical trials, pediatrics, providers, engagement, enrollment

**Posted Date:** June 14th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-42309/v1>

**License:**  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

---

# Abstract

## Background

Clinical trials are the gold standard for assessing the effectiveness and safety of treatments. The objective of the current study was to assess provider opinions regarding implementing pediatric clinical trials in various practice settings across Kansas.

## Methods

The study was completed within the Sunflower Pediatric Clinical Trials Research Extension (SPeCTRE), an affiliate of the IDeA States Pediatric Clinical Trials Network (ISPCTN). A cross-sectional, 36-item survey was administered to a state-wide convenience sample targeting health care providers and clinic staff.

## Results

A total of 119 health care providers and clinic staff completed surveys; 31% were physicians. Physicians were more likely than other clinic staff to have experience with clinical trials (correlation coefficient [CC]=0.270,  $p=0.004$ ). When compared to urban respondents, rural providers were less supportive of recruitment for clinical trials in their practices (CC=-0.251,  $p=0.008$ ) and more likely to feel comfortable referring patients for clinical trials involving treatments that their insurance did not cover (CC=0.302,  $p=0.001$ ).

## Conclusion

A range of rural and urban health care professionals support the performance of pediatric clinical trials but identify several barriers as well. These results will support future pediatric clinical trials across the country including Kansas.

TRIAL REGISTRATION: NA

# Introduction

Clinical trials are the gold standard for assessing the effectiveness and safety of treatments in health care (1). Dramatic improvements in health care outcomes have resulted from clinical trials, such as reduced mortality in childhood leukemia (2). Despite the benefits of pediatric clinical trials to health outcomes, children routinely receive medical therapies that have not been studied in clinical trials involving pediatric subjects (3). For example, over 75% of hospitalized children may receive a medication “off-label,” in a manner not explicitly approved in children (3).

Numerous factors may restrict broader implementation of clinical trials in pediatric settings. Prior studies have reported patient and provider time constraints, lack of trained staff, and scarcity of appropriate facilities for clinical trials procedures as potential barriers (4,5). These barriers all point to a lack of

dedicated resources for pediatric clinical trials (6). In an attempt to increase the availability of pediatric clinical trials resources, the National Institutes of Health funded the IDeA States Pediatric Clinical Trials Network (ISPCTN; 7). The ISPCTN's primary objectives are to 1) extend clinical trials opportunities to children and communities; and 2) to increase the capacity of participating states to conduct pediatric clinical trials. Participating sites within the ISPCTN are located in states that are part of the Institutional Development Award (IDeA) Program. The IDeA Program, which was established by congressional mandate in 1993, seeks to broaden the geographic distribution of NIH funding through faculty development and institutional research infrastructure enhancements in states with historically low NIH funding (7).

As the program for the ISPCTN in the state of Kansas, the Sunflower Pediatric Clinical Trials Network (SPeCTRE) deployed targeted surveys to assess barriers and facilitators to clinical trials participation faced by parents/caregivers and health care providers residing in rural and urban communities across one rural IDeA state – Kansas. The objective of the current study was to identify and determine the relative importance of specific factors relating to implementation of pediatric clinical trials in various practice settings across the state.

## Methods

Our team administered a 36-item survey online and in person to a convenience sample of health clinic providers, nurses, and non-clinical administrative staff. Subjects were recruited into the study in person by research staff who visited clinics and practice sites or via targeted email. Participants were surveyed over a two-year period (2017-2018).

Our sampling strategy focused on ensuring that health care providers and staff working in a variety of settings were included. Participating subjects were recruited from one of three settings: 1) community-based outpatient clinics; 2) county health departments; and 3) academic medical centers and affiliated clinics. Emails were also distributed to health care providers and staff who had signed up for education and outreach activities through the University of Kansas Medical Center Area Health Education Centers (AHECs). The AHECs' mission is to enhance the quality and accessibility of health care services in Kansas through partnerships with communities, health care professionals, and organizations across the state.

The study team used distinct procedures for in-person and online enrollment. For in-person enrollment, written documentation of risks and benefits was provided to respondents with questions answered by the study team. Following verbal consent, respondents completed surveys by paper or on an electronic tablet based on participant preference. Online enrollment was completed with an initial email; review of the email and participation in the survey indicated consent.

Survey items were adapted by an expert panel of SPeCTRE network members from established tools in the literature(4,8) and beta tested for understandability with a convenience sample. Beta testing indicated small wording changes, primarily grammatical, would be helpful to aid health care provider

understanding of items. These changes were implemented, but the same Likert scale (5 points) and item content was used from the original published versions (4,8). Additional items addressing basic demographic information, practice type, experience with clinical trials, and preferences for learning more about clinical trials were also included. Survey responses were recorded in REDCap™ (9) either directly from participants or entered from paper surveys. The University of Kansas Medical Center Institutional Review Board (KUMC IRB) approved and monitored the study. Survey participation was voluntary and provided without incentive. Data analyses were completed in IBM SPSS Statistics 23 (Armonk, NY) using t-test or non-parametric statistical methods, including Spearman's correlation coefficient (CC) and Kruskal-Wallis H test, as appropriate.

## Results

A total of 145 participants completed at least one survey item and 119 completed all survey items, for a completion rate of 82%. Response rate from site visits was 100%; response rate from email could not be determined due to changes in the listserv membership during the study period. Demographics of participants are detailed in Table 1. Physicians and nurses represented the most frequent professional roles for participants (31% and 32%, respectively). The largest proportion of respondents was recruited from clinic-based practice (39%), with a smaller number of respondents engaged in hospital-based practice (14%). The majority of respondents (52%) came from the Northeast Kansas region that includes the Kansas City metropolitan area; 22% of respondents were from areas considered rural. The majority of surveys were completed online (53.4%).

Respondents reported low participation but general enthusiasm for clinical trials. Only 23% of respondents had ever enrolled a patient into a clinical trial; 43% had referred a patient to participate in a clinical trial. Clinical experience by years of practice was significantly associated with respondents' level of experience with clinical trials (no experience, experience referring, and experience enrolling;  $H=17.233$ ,  $p < .05$ ). Physicians were significantly more likely than other clinic providers to have experience with clinical trials (CC = .270,  $p = .004$ ).

Most respondents (55%), regardless of clinic role, were interested in learning more about clinical trials. Respondents most often reported interest in learning about available clinical trials in their area (35%, Figure 1). A comparable number of respondents preferred receiving information on clinical trials through in-person and online (e.g. Skype, webinar, telemedicine) educational activities (Table 2). Roughly one third of respondents requested continuing medical education (CME) credit for such sessions. Physicians (CC = .210,  $p = .23$ ) were significantly more likely to prefer CME learning opportunities than were other clinic roles. Of note, no learning modalities neared 50% preference from respondents.

Table 2 describes beliefs regarding clinical trials according to a 5-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). Because responses were non-normally distributed, data are reported as median (interquartile range [IQR]). Respondents considered clinical trials safe and effective (Med 4 [IQR 3-5]). and agreed that their clinical practice supports clinical trials. A

minority of respondents identified time constraints as a barrier to their clinic's participation in clinical trials. Respondents agreed that limiting costs incurred by patients and the clinic would increase their desire to offer and/or participate in clinical trials. Respondents endorsed that reducing the burden of paperwork would be important for their practice to participate in clinical trials (Med 4 [IQR 4-5]) but were equivocal that their practices were not ready for a clinical trial (Med 3 [IQR 2-4]). Most respondents agreed that clinical trials are critical for advancing patient care.

Restrictions for study design did not seem to influence interest in clinical trial participation. Respondents expressed disagreement with statements that they would not offer a clinical trial to participants if it involved use of a placebo in a study arm or randomization. However, many expressed agreement with offering a clinical trial to patients only after standard of care treatment had failed.

There were no significant differences in providers' perceived barriers to referring patients to clinical trials based on their years in practice, except the perceived cost to their practice. A significant positive correlation was observed between perceived cost to their own practice and providers' age (CC = .247,  $p = .007$ ), years in practice ( $H = 11.283$ ,  $p = .024$ ), and level of experience with clinical trials ( $H = .192$ ,  $p = .038$ ). Negative correlations were observed between providers' perception that their practice is "not ready" and their age (CC = -.230,  $p = .013$ ) and level of experience with clinical trials (CC = -.347,  $p < .05$ ). Additionally, providers' level of experience with clinical trials was positively correlated with perceived barriers, including time, complexity of the protocol, lack of trained staff, and complexity of informed consent (Table 3).

The three benefits most cited as potential incentives for pediatric clinical trials participation included compensation for time and travel (72%), providing tests and medications not covered by insurance (64%), and providing the opportunity at a local practice or clinic rather than traveling to the research site (64%). Additional logistical considerations such as option for telephone participation (63%) or telehealth visit (40%) as well as childcare support (68%) were noted by a large number of respondents.

## Discussion

Consistent with past studies (4,10), our survey of health care providers and non-clinical office staff found that a majority of respondents were interested in participating in clinical trials, but only a small fraction had enrolled patients in such studies. Our findings additionally support previous studies (6,8) that identified an interest in clinical trials among providers and staff but also found a lack of familiarity with their availability and conduct. The present study provides new insights into the perceived barriers to clinical trials participation reported by non-physician health care staff including advanced practice providers, nurses, and non-clinical office staff. While prior literature supports the assertion that primary care physicians are the preferred person of contact for clinical trials participants (11,12,13), successful implementation of clinical trials requires engagement and at least basic knowledge/skills for non-clinical and support staff in order to identify potentially eligible subjects in an efficient manner and otherwise carry out a trial.

Respondents generally reported agreement with survey items that addressed resource constraints and clinic preparedness as barriers to clinical trials participation. Particularly, the need to have clinical trials protocols that were easy to understand, the desire to minimize expense to the clinic for participation, and the need to have adequate training in the protocol before participation were strongly supported by respondents. Previous studies have also reported that knowledge, logistical, and financial constraints prevent participation (12). Training and financial support of on-site research staff at all locations could help address these concerns.

Time constraints were less often reported as a barrier to clinical trials participation in contrast to prior studies (6,10). In particular, preparedness presented an obstacle to clinical trial implementation with a minority of health care staff ready to engage in such research. Compared to caregiver perceptions, health care staff reported less concern regarding the structural components of experimental design such as randomization to placebo (5,10). Health care staff were relatively supportive of enrollment in clinical trials when effective alternative treatment existed but expressed more reservation to offer higher-risk studies. This reservation is similar to what parents report related to risk-benefit (5,14).

Health care staff perceptions of the benefits of incentives for subject participation coincided with the sister caregiver survey administered by our team (under review) and with established literature (5,6). Financial incentives such as compensation for time and travel and underwriting of clinical services were the most popular responses, although transportation and childcare also could motivate trial participation. A minority of responses indicating preference for a telehealth option for clinical trial enrollment may reflect a hesitancy or unfamiliarity for such technology. Patient and providers both show hesitation to engage in a clinical trial if alternative treatments exist. Targeted feedback from participating providers and potential study participants could better construct language in consent to detail risks and benefits when alternative treatments exist (8,10).

To address knowledge gaps, results from our survey suggest that multi-modal educational interventions that include in-person and online options with offered CME are preferred methods for disseminating information on clinical trials. Health care staff drawn from rural, urban, academic, and community practices showed interest in online and in-person education. Additional qualitative evaluation of staff perspectives on educational activities could better identify preferred modalities. Surveying a greater number of participants from provider, nursing, and clinical roles could also better characterize knowledge gaps in each group. Closing such gaps is critical to expanding clinical research in lower resource regions (15). As with incentives, a minority of health care staff desired to receive education via telehealth. With the increasing use of telehealth across Kansas, such attitudes may change (16).

Our findings provide specific insight into the most common and most important perceived barriers to pediatric clinical trials participation faced by health care providers and staff in Kansas. Our findings are informing a large-scale study aimed at describing barriers and facilitators to clinical trials participation at clinics and other study sites across the broader ISPCTN. Results from the larger study will inform broader outreach efforts that the network will employ to engage more community and rural practices in clinical

trials. In the long term, our network's experience with these strategies could provide an evidentiary basis for their use in other rural and/or underserved settings nationally. Future qualitative research may include the addition of technological options for sharing information that were absent in the current study, such as text messaging and smartphone applications.

A number of limitations affect this study. Convenience sampling predominantly from a limited number of sites could result in selection bias. Our sample size precluded conducting some important sub-analyses, particularly comparisons between rural and urban settings. Broader engagement of rural practices throughout the state could allow such comparisons in the future. Third, respondents from Kansas may not be representative of other ISPCTN communities; future studies are planned that will engage other sites. Adjustments to the wording of survey items may reduce their comparability to the source tools. However, beta testing for item comprehension was deemed necessary to maximize internal validity. Finally, non-clinical staff roles were not specified; further characterization of these roles could help identify targeted concerns that need to be addressed to enhance clinical trials participation.

## **Conclusion**

In conclusion, physicians and other healthcare providers and staff across a broad range of disciplines and geography in Kansas support the performance of pediatric clinical trials but identify logistical barriers that reduce their willingness to refer potential subjects to or to participate in such studies. Poor self-efficacy, cost, logistics, insufficient time, and administrative challenges are all potential targets for intervention to increase pediatric clinical trials participation. These results will help inform future, larger-scale assessments of barriers and facilitators to clinical trials participation planned for the ISPCTN and will aid the introduction and successful implementation of pediatric clinical trials in Kansas and similar regions.

## **Abbreviations**

SPeCTRE- Sunflower Pediatric Clinical Trials Network

IDeA- Institutional Development Award

ISPTCN- IDeA States Pediatric Clinical Trials Network

AHEC

KUMC IRB- University of Kansas Medical Center Institutional Review Board

CME- Continuing medical education

## **Declarations**

### **Consent to publish**

No identifying information or images of participants is included in the manuscript, so no such consent is applicable.

### **Competing interests**

This article is not currently being considered for publication by another journal, and if the paper is accepted it will not subsequently be published in the same or similar form in any language without the consent of publishers.

### **Ethics Approval and Consent to Participate**

Consent was obtained from all participants in the study and reviewed by the Institutional Review Boards (IRB) at the University of Kansas and Children's Mercy Hospital.

### **Funding**

Dr. McCulloh receives support from the Office of the Director of the National Institutes of Health under award UG1OD024953. Drs. Davis and Pahud receive support from the Office of the Director of the National Institutes of Health under award UG1OD024943. The remaining authors did not receive funding. Funded by the National Institutes of Health (NIH) through the Institutional Development Network (IDeA) that supports growing research capacity and infrastructure in US states with limited research funding. The award supported a research coordinator that assisted with data collection and partial salary for Drs. McCulloh, Davis, and Pahud who assisted with data analysis and interpretation.

### **Competing Interests**

The authors declare no competing interest.

### **Authors' contribution**

TRS reviewed the data and assumed the primary responsibility of writing the paper with RM. MTB completed initial statistical analysis while JD reviewed the initial analysis and led formatting manuscript for publication. CS, NS, BP, and AD led creation of study tool and contributed their wealth of expertise in editing the paper. All authors listed on the paper reviewed and approved the manuscript as submitted.

### **Acknowledgements**

We would like to acknowledge the contributions of our survey participants, the health care staff who so willingly expressed their opinions related to pediatric clinical trials. Also, we would like to acknowledge the financial support our team received from the Kansas and Nebraska sites of the IDeA States Pediatric

Clinical Trials Network to conduct this study (UG10D024953). We also thank the Medical Writing Center at Children's Mercy Kansas City for editing this manuscript.

## References

1. Pasquali SK, Lam WK, Chiswell K, Kemper AR, Li JS. Status of the pediatric clinical trials enterprise: an analysis of the US ClinicalTrials.gov registry. *Pediatrics*. 2012;130(5):e1269-77.
2. Caldwell PH, Murphy SB, Butow PN, Craig JC. Clinical trials in children. *Lancet*. 2004;364(9436):803-11.
3. Roldan T, Villamanan E, Ruano M, Larrubia Y, Gomez-Salcedo P, Herrero A. Analysis of clinical trials and off-label drug use in hospitalized pediatric patients. *Arch Argent Pediatr*. 2014;112(3):249-53.
4. Barakat LP, Patterson CA, Mondestin V, Chavez V, Austin T, Robinson MR, et al. Initial development of a questionnaire evaluating perceived benefits and barriers to pediatric clinical trials participation. *Contemp Clin Trials*. 2013;34(2):218-26.
5. Friedman DB, Foster C, Bergeron CD, Tanner A, Kim SH. A qualitative study of recruitment barriers, motivators, and community-based strategies for increasing clinical trials participation among rural and urban populations. *Am J Health Promot*. 2015;29(5):332-8.
6. Sabesan S, Burgher B, Buettner P, Piliouras P, Otty Z, Varma S, et al. Attitudes, knowledge and barriers to participation in cancer clinical trials among rural and remote patients. *Asia Pac J Clin Oncol*. 2011;7(1):27-33.
7. Snowden J, Darden P, Palumbo P, Saul P, Lee J, Network IDSPCT. The institutional development award states pediatric clinical trials network: building research capacity among the rural and medically underserved. *Curr Opin Pediatr*. 2018;30(2):297-302.
8. Mahmud A, Zalay O, Springer A, Arts K, Eisenhauer E. Barriers to participation in clinical trials: a physician survey. *Curr Oncol*. 2018;25(2):119-25.
9. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2):377-81.
10. Greenberg RG, Corneli A, Bradley J, Farley J, Jafri HS, Lin L, et al. Perceived barriers to pediatrician and family practitioner participation in pediatric clinical trials: Findings from the Clinical Trials Transformation Initiative. *Contemp Clin Trials Commun*. 2018;9:7-12.
11. Sherber NS, Powe NR, Braunstein JB. Personal physicians as study investigators: impact on patients' willingness to participate in clinical trials. *Contemp Clin Trials*. 2009;30(3):227-32.

12. Svensson K, Ramirez OF, Peres F, Barnett M, Claudio L. Socioeconomic determinants associated with willingness to participate in medical research among a diverse population. *Contemp Clin Trials*. 2012;33(6):1197-205.
13. Karlsson AK, Kullberg J, Stokland E, Allvin K, Gronowitz E, Svensson PA, et al. Measurements of total and regional body composition in preschool children: A comparison of MRI, DXA, and anthropometric data. *Obesity (Silver Spring)*. 2013;21(5):1018-24.
14. Luchtenberg M, Maeckelberghe E, Locock L, Powell L, Verhagen AA. Young People's Experiences of Participation in Clinical Trials: Reasons for Taking Part. *Am J Bioeth*. 2015;15(11):3-13.
15. Connor EM, Smoyer WE, Davis JM, Zajicek A, Ulrich L, Purucker M, et al. Meeting the demand for pediatric clinical trials. *Sci Transl Med*. 2014;6(227):227fs11.
16. Davis AM, Sampilo M, Gallagher KS, Landrum Y, Malone B. Treating rural pediatric obesity through telemedicine: outcomes from a small randomized controlled trial. *J Pediatr Psychol*. 2013;38(9):932-43.

## Tables

**Table 1. Participant Demographics (n=145).**

|                                | N (%)    |
|--------------------------------|----------|
| Gender <sup>1</sup>            |          |
| Male                           | 22 (19%) |
| Female                         | 94 (81%) |
| Ethnicity <sup>2</sup>         |          |
| White                          | 95 (83%) |
| Black                          | 13 (11%) |
| Other                          | 7 (6%)   |
| Age (years) <sup>3</sup>       |          |
| 18-34                          | 44 (38%) |
| 35-44                          | 27 (23%) |
| 45-54                          | 21 (18%) |
| 55+                            | 25 (21%) |
| Professional Role <sup>4</sup> |          |
| Physician                      | 37 (31%) |
| Advanced Practice Provider     | 16 (14%) |
| Nurse                          | 38 (32%) |
| Other                          | 27 (23%) |
| Practice Location <sup>5</sup> |          |
| Urban/Suburban                 | 16 (14%) |
| Rural                          | 38 (32%) |

<sup>1</sup>Gender n = 116; <sup>2</sup>Ethnicity n = 115; <sup>3</sup>Age n = 117; <sup>4</sup>Professional Role n=118; <sup>5</sup>Practice location n= 118

**Table 2. Respondent beliefs regarding clinical trials.**

|   | N   | Median <sup>1</sup> | Q1   | Q3   |
|---|-----|---------------------|------|------|
| I consider clinical trials a safe and effective treatment option for my patients.   | 119 | 4.00                | 3.00 | 5.00 |
| I feel comfortable offering a clinical trial as a treatment option to my patient.   | 118 | 4.00                | 3.00 | 5.00 |
| I would not feel comfortable if my patients were not assigned to receive a treatment in a clinical trial (i.e. is assigned to receive a placebo, sugar pill). | 118 | 3.00                | 2.00 | 3.00 |
| I would offer a clinical trial treatment option to my patients if I had more time.  | 119 | 3.00                | 3.00 | 4.00 |
| I would offer a clinical trial as a treatment option to my patients even if the standard treatment has not failed.  | 119 | 3.00                | 2.00 | 4.00 |
| I would recruit my patients into a clinical trial if the protocol was easy to understand.   | 122 | 4.00                | 4.00 | 5.00 |
| I would recruit my patients into a clinical trial if it didn't cost my practice/clinic.   | 124 | 4.00                | 3.00 | 5.00 |
| I would offer a clinical trial treatment option to my patients if their insurance could cover tests/medications for them related to the trial.                | 123 | 4.00                | 4.00 | 5.00 |
| I support clinical trial recruitment and enrollment at my practice/clinic.  | 124 | 4.00                | 3.00 | 5.00 |
| I do not feel comfortable offering a clinical trial as a treatment option to my patients.   | 119 | 2.00                | 1.00 | 3.00 |
| I would recruit my patients into a clinical trial if I had a training to complete the necessary paperwork.  | 120 | 4.00                | 3.00 | 4.00 |
| I would recruit my patients into a clinical trial if I had trained staff to complete the necessary paperwork.   | 120 | 4.00                | 4.00 | 5.00 |
| I would only offer a clinical trial as a treatment option to my patients if the standard treatment has failed.  | 119 | 3.00                | 2.00 | 4.00 |
| I feel my practice/clinic is not ready to conduct a clinical trial.   | 119 | 3.00                | 2.00 | 4.00 |
| I would not feel comfortable offering a clinical trial to my patients if the research involves randomization (where they receive one of two treatments).      | 119 | 2.00                | 2.00 | 3.00 |
| I would recruit my patients into a clinical trial if the informed consent was easy to understand.   | 118 | 4.00                | 4.00 | 5.00 |
| I believe clinical trials help us discover new treatment options to improve patient care.   | 121 | 5.00                | 4.00 | 5.00 |

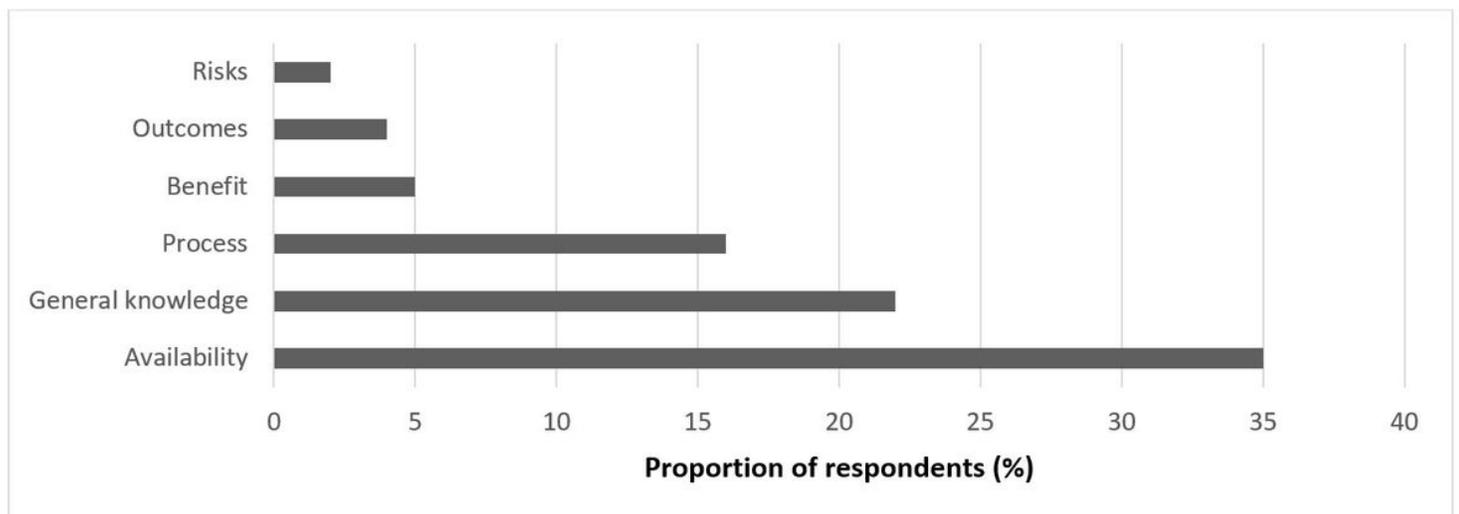
<sup>1</sup>Median on 5-point Likert scale.

**Table 3. Correlation between provider perceived barriers to recruiting based on their years in practice, age group, and level of experience with clinical trials.**

|                                      | Years in Practice |         | Provider's Age Group |         | Level of experience with clinical trials |         |
|--------------------------------------|-------------------|---------|----------------------|---------|--|---------|
|                                      | H#                | p-value | CC#                  | p-value | CC#                                      | p-value |
| Lack of provider time                | 2.459             | 0.652   | 0.115                | 0.223   | 0.243*                                   | 0.008   |
| Complexity of the protocol           | 3.483             | 0.480   | 0.107                | 0.252   | 0.194*                                   | 0.036   |
| Cost to the practice/clinic          | 11.283*           | 0.024   | 0.247*               | 0.007   | 0.192*                                   | 0.038   |
| Lack of trained staff                | 4.374             | 0.358   | -0.031               | 0.739   | 0.337*                                   | 0.000   |
| Complexity of informed consent       | 2.964             | 0.564   | 0.141                | 0.134   | 0.259*                                   | 0.006   |
| Overall, practice is not ready       | 8.712             | 0.069   | -0.230*              | 0.013   | -0.347*                                  | 0.000   |
| Patients' medical insurance coverage | 8.850             | 0.065   | 0.179                | 0.055   | 0.064                                    | 0.491   |
| Lack of access to standard treatment | 3.448             | 0.486   | 0.16                 | 0.09    | 0.122                                    | 0.189   |
| Lack of training                     | 2.453             | 0.653   | -0.043               | 0.642   | 0.043                                    | 0.652   |

\*Denotes values with p-value less than 0.05 # CC= correlation coefficient, H= Kruskal-Wallis H test

## Figures



**Figure 1**

Information needs identified by participants.

## Supplementary Files

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

- [protocolforSPECTREstudy.docx](#)
- [CorrespondenceforMODCR0000473021.pdf](#)
- [SPeCTREProviderSurveDATA.csv](#)