Abstract

Patient-centered care is increasingly recognized as essential for understanding participant expectations and generating more accurate and reliable clinical trial results. This study aimed to evaluate an interview-based feedback tool designed to provide a comprehensive assessment of patient experience at a free standing high-enrolling clinical site in the Pacific Northwest. The primary objectives were to identify strengths and weaknesses in current procedures, enhance recruitment and retention, and develop a model adaptable to other sites. A structured interview tool was independently developed based on literature supporting the integration of qualitative and quantitative feedback to capture a multidimensional view of patient experience. The tool was administered to 73 patients over a four-day period in July 2025 and included one Likert-scale question and seven open-ended questions addressing areas such as participation motivation, staff communication, time efficiency, and areas for improvement. Participants ranged in age from 18 to 87 years, with a mean age of 54 and a median age of 58. Common motivations for participation included personal health benefits and access to healthcare advancements, and all participants reported positive interactions with staff. Dissatisfactions primarily arose from long waits and complex study procedures. This study highlights the importance of real-time feedback as a low-cost, high-impact strategy for identifying inefficiencies and strengthening trust in a responsive research environment. These findings have broad applicability for designing participant-centered protocols across many clinical sites.

Keywords: Patient Satisfaction, Clinical Trials, Patient-Centered Care, Participant Feedback

Background

Over the past decade, clinical research has been shifting towards an approach that puts patients at the center of the process[1]. While clinical trials remain the "gold standard" for evaluating medical interventions, their success depends both on proper methodology and participant engagement which builds trust and improves retention. The recent 2025 Good Clinical Practice (GCP) guidelines reinforce these factors by highlighting the importance of patient-centered approaches to improve clinical trial outcomes and ethical standards[2,3]. Through a patient-centered approach, participants are viewed not just as passive data sources but active contributors whose experiences and feedback can significantly shape patient compliance with therapy in clinical trials and improve their recruitment and retention[4].

However, the operational structures of most clinical research sites still need to integrate patient perspectives and opinions into routine quality improvement[5]. A meta-analysis in randomized clinical trials of PTSD found that 29.8% to 30.3% of trial participants discontinue their participation before study completion[6]**.** The reasons cited often go beyond adverse side effects or deterioration of health, and instead include factors such as inadequate communication, poor scheduling, insufficient explanation of procedures, and dissatisfaction with clinic environments[7]. These discontinuations can introduce bias, increase costs, and may even hinder the development of scientific findings into clinical practice.

The concept of patient-centered care originated in large health care systems and is now only beginning to be extended to clinical research environments[1,8]. This expansion has led to the development of tools such as patient-reported experience measures (PREMs) and patient engagement structures in clinical trial

design[9]. However, many clinical environments still rely on post-study exit surveys or satisfaction questionnaires that are sent to patients afterwards which may fail to capture the full-picture view of the real-time experience of participants due to non-response bias and the time span between the visit experience and the survey[10,11]. These retrospective tools often are non-standardized and purely qualitative, and lack the specificity needed to bring about site-level operational improvement. They also have the danger of producing positively inflated patient satisfaction reports that distort the reflection of true performance at a clinical center[7,12,13]. This means there is still a lack of information regarding unbiased real-time patient satisfaction in the clinical trial experience. After recognizing these limitations, we aimed to implement a patient-centered feedback system that could provide immediate and actionable insights about the patient experience at a clinical site.

The clinical center where the feedback survey is conducted is a free-standing and high-enrolling community clinical trial center in the Pacific Northwest that sees an average of 700 patients each month and conducts early-phase drug development trials for several indications including Alzheimer's Disease, mental health disorders, and pain and obesity related disorders, among others. While about one-third of the patients presenting to the clinical trial center are from the database that the center maintains, the remaining participants presenting for participation are a mix of patients referred by their doctors, friends or family or responding to social media recruitment advertisements. Given the high enrolling status and high number of patient visits, we conducted our research at this site to understand what helps and what hurts with patient satisfaction and in turn increase both recruitment and retention of patients throughout the study.

This study aimed to evaluate patient and caregiver experiences during their visit to the clinical site using a newly developed feedback instrument. The tool included Likert-scale and open-ended questions focusing on six key areas: motivation for participation, staff communication and comfort, procedural clarity, time efficiency, willingness to return or recommend, and possible areas for improvement. Additionally, the feedback form included open-ended sections to record additional comments or concerns on behalf of the patient not previously addressed by the research team.

By identifying patterns in participant responses, this project aims to provide practical recommendations for enhancing patient-centered care at the clinical center and offer a model that can be adopted by other clinical research sites seeking to operationalize patient feedback. The implications of this work in patient satisfaction extend beyond the setting of this specific clinical site and is meaningful to apply to systemic barriers such as trial ineligibility, withdrawal of consent, and early terms of subjects already enrolled in trials, which shape clinical trial participation in the real-world context[14,15].

Methods

Study Design

This study used an interview-based, cross-sectional design to assess patient experiences in real time. All data collection occurred at the same clinical site and the study was approved as a quality improvement initiative by the clinical center's administrative team including coordinators, front desk staff, lab staff,

and doctors. The development of this feedback tool was guided by previous research demonstrating the utility of real-time data in improving healthcare quality and bringing attention to how ethically imperative it is to treat research participants as partners instead of subjects[7,16]. The focus was on real-time interviews rather than retrospective surveys afterward visits to reduce recall bias and capture fresh impressions of the clinical experience. Additionally, we employed both qualitative and quantitative design in our survey, in the form of open-ended questions and a Likert-style question, so that it encapsulates the complexities of factors such as environment, mood, and past experience that influence patients' perspectives while also offering a numbered scale review of the overall experience for each participant[17].

Participant Recruitment

Over a four-day period in July 2025, all patients attending in-person research visits were eligible for inclusion in the feedback interview. Patients were informed about the voluntary nature of the study and invited to participate using a standardized "blue slip" offered by front desk staff and study coordinators. A total of 73 participants were enrolled out of 237 eligible individuals, yielding a response rate of 30.8%. Reasons for declining participation included factors such as time constraints and lack of interest.

Interview Format

A structured interview format was developed in consultation with clinical research coordinators on Google forms. Table 1 shows all the questions asked to participants in the survey which included one Likert-scale question and seven open-ended questions. The Likert-scale question was given on a scale from 1 to 10 with 1 being the worst and 10 being the best and was used to rate the patient's overall visit experience on the day the survey was conducted. The open-ended questions included reasons for joining the study, history and diagnosis with the clinical site, suggestions on areas of improvement, feedback on staff interaction, environmental comfort, and wait times.

Each interview lasted approximately 5-7 minutes and was conducted by interns who administered the same questions and standardized script from the google forms to each patient in a conversation-style format to minimize variation. Responses were recorded manually and entered into excel. Both quantitative and qualitative data were analyzed and organized into bar charts to identify recurring themes and trends.

Table 1. Patient Satisfaction Survey Questions

Question Number	Survey Question	Type	Category
1	What brought you to the clinical trials site today? (e.g., first-time visit, follow-up, referred by doctor). What is the diagnosis?	Open-ended	Reason for Visit
2	Why did you decide to join this clinical trial? If you have been part of a clinical trial before, how long have you been coming in? (e.g., to help research, for health reasons, compensation, curiosity).	Open-ended	Motivation
3	How would you describe how the staff treated you today (doctors, coordinators, front desk, lab)? · Did doctors introduce themselves? · Did coordinators introduce themselves? · Did they ask your name and how you'd like to be addressed? · Is there anyone specific you would like to praise or give feedback about (positive or negative)?	Open-ended	Staff Interaction
4	Did you feel safe and comfortable throughout your visit?	Open-ended	Comfort & Safety
5	Do you feel that the staff used your time efficiently during the visit? · Was the visit and procedures explained in a way that made sense to you? · Was anything confusing or unclear?	Open-ended	Communication & Time Efficiency

6	Before starting this study, did you feel like you had a good understanding of what to expect? · Scheduling, check-in, transportation, reminders, wait-time, paperwork, compensation, lab work · What helped? · What didn't?	Open-ended	Patient Understanding & Expectations
7	On a scale from 1 to 10, how would you rate your overall experience today? (1 = worst, 10 = best).	Likert scale (1-10)	Overall Satisfaction
8	Is there anything you would like to see improved? What helped and what didn't? · Scheduling, check-in, transportation, reminders, wait-time, paperwork, compensation, lab work	Open-ended	Areas for Improvement

Note. Open-ended questions allow participants to elaborate on their experiences, while the Likert-scale item provides a quantitative measure of overall satisfaction.

Results

Participant Characteristics and Response Rates

Over the four-day data collection period, a total of 73 out of 237 patients or 30% of patients who visited the clinical site agreed to participate in the interview. The number of patients interviewed each day was as follows. On Monday 19 patients out of 63 patients agreed to participate (30.15%), on Tuesday 23 out of 68 patients agreed to participate (33.82%), on Wednesday 20 out of 56 patients agreed to participate (35.71%), and on Thursday 11 out of 50 patients agreed to participate (22%). It is important to consider that demographic information such as age, race, education, job status, and distance to the clinical center was collected as summarized by Table 2.

Most respondents were between 50 and 70 years old (47.9%), with an overall mean age of 54.1 years (SD = 18.4), a median of 58 years, and an overall age range of 18 to 87 years. The cohort was balanced by sex,

with 53.4% identifying as male and 46.6% as female. In terms of race, the majority of participants identified as White (74%), followed by Black or African American (12.3%), with smaller proportions identifying as American Indian or Alaska Native (4.1%), Asian (2.7%), or multiple races (6.8%), and one participant (1.4%) did not report race. Educational attainment was generally high, with 68.4% of participants reporting 13 or more years of formal education. Thirteen years of formal education was defined as completion of a high school diploma or GED. With respect to geographic accessibility, fewer than one in ten participants (8.2%) lived within 10 miles of the clinical trial site, while nearly half (47.9%) resided between 11 and 25 miles away. An additional 28.8% lived 26–50 miles away, and 15.1% reported traveling more than 50 miles to participate. Collectively, these findings support that the sample was characterized by relatively high educational attainment, modest racial diversity, and a substantial proportion of participants traveling considerable distances to attend study visits.

Table 2. Demographic Distribution of Respondents

		Total Participants (N=73)
Sex, No. (%)		
	Male	39 (53.4%)
	Female	34 (46.6%)
Age		
	Mean (SD)	54.1 (18.4)
	Median (min, max)	58 (18, 87)
Age Group, No. (%)		
	≥ 60	35 (47.9%)
	> 30, < 60	28 (38.4%)
	≤ 30	10 (13.7%)
Race, No. (%)		
	American Indian or Alaska Native	3 (4.1%)

	Asian	2 (2.7%)
	Black or African American	9 (12.3%)
	White	54 (74%)
	Multiple	5 (6.8%)
	Missing	1 (1.4%)
Education	≥ 13 y, No. (%)	50 (68.4%)
Distance from Clinical Site		
	≤ 10 miles	6 (8.2%)
	≥ 11, ≤ 25 miles	35 (47.9%)
	≥ 26, ≤ 50 miles	21 (28.8%)
	> 50 miles	11 (15.1%)

Motivations for Participation

Patients participating in the survey had a myriad of different reasons for joining clinical trials as shown in Figure 1. Among the 73 respondents, 77% (n=56) reported their primary motivation was to address a personal or family health concern, 36% (n=26) reported their primary motivation was to have access to new treatments, 26% (n=19) reported their primary motivation was to contribute to scientific advancement, 19% (n=14) reported their primary motivation was out of pure curiosity, and 14% (n=10) reported their primary motivation was financial compensation. Some patients listed multiple motivations, which highlight the nuance that factors into the motivation for study participation. Additionally, as seen in Table 3, there are a large variety of indications that patients came for with the greatest number of patients (n=22) presenting for the indications of depression/anxiety, followed by neuropathy (n=21) and the least number of patients presenting for the indications of joint pain or arthritis (n=2).

Table 3. Participant Indications

Indications for Visit	Number of Patients	Percentage
Depression/Anxiety	22	30%
Neuropathy	21	29%
Weight Loss	11	15%
Alzheimer's Disease	8	11%
OCD/Autism	3	4%
Joint Pain/Arthritis	2	3%
Indication not mentioned	6	8%

Staff Communication and Conduct

For the Likert-scale item in which patients rated their overall daily experience from 1 (lowest) to 10 (highest), responses (n = 73) demonstrated a mean score of 9.42 and a median of 10. Reported ratings ranged from 7 to 10, which indicates consistently high levels of patient satisfaction.

Every respondent described staff as professional, courteous, and respectful. Words such as “polite,” “helpful,” and “thoughtful” were used repeatedly in qualitative feedback. Several participants noted that staff members were attentive to their comfort and consistently explained procedures clearly. However, 22 patients (30%) identified a gap in introductions, stating that staff members often began procedures without introducing themselves by name or role. Patients suggested that consistent introductions would help foster understanding and humanize the experience, which is helpful for reducing anxiety, especially in a patient’s initial visit or in studies that have many follow-up visit components.

Time Efficiency and Wait Times

When asked about time efficiency, 66 participants (90%) reported that their time was used efficiently, while 16 participants (22%) reported long wait times or confusion around room assignments. It was noted that more dissatisfaction was expressed in participants involved in studies with multiple procedures and long visits such as those involving blood and urine collection, preparing immunizations, or when study partners had to complete similar procedures that were done independently rather than concurrently. The main complaint of inefficient use of time was time spent waiting either at the beginning of the visit to be

accepted into a room or between steps such as blood draws and seeing a doctor. These complaints on delays show that inefficiencies often come from the structural elements of the protocol, like the order and sequencing of procedures, rather than how a particular clinical site executes these activities.

Procedural Clarity and Patient Understanding

For the most part, 75% of the patients (n=55) reported that they felt procedures were well explained to them, which was very helpful with informing them on what to expect or how their visit would proceed. These patients frequently mentioned pre-visit phone calls from study coordinators, emails and text reminders, information on the website of the clinical site, and prior participation experience in similar studies to be helpful. Additionally, 6 patients (8%) indicated that they had a vague understanding prior to the visit and got their questions answered during the visit by doctors or through reading paperwork, and only 12 patients (16%) reported some degree of confusion. Among the 12 patients with confusion, there are two main reasons. The first is lack of information regarding the visit agenda, which oftentimes relates to the format and nature of the study**.** For instance, one patient wasn't aware that they were doing three blood draws in one day and would have liked more clarity and information about the procedure beforehand. The second reason is that some participants (n=2) who had screen failures were not informed of potential disqualification before traveling long distances. For instance, the front desk had not clarified whether a patient could qualify for a study, so he drove 1.5 hours to the clinical center only to be deemed ineligible to participate. Some suggestions he provided were to post eligibility criteria online so that patients don't waste their time traveling to the clinical site only to find out they are not eligible to participate in a study of interest. Overall, patients appreciated it when they had more information prior to arrival and felt dissatisfied or confused when they encountered surprises or unexpected news.

Environmental Comfort and Patient Experience

All participants expressed that they felt safe and comfortable during the entire duration of their visits including waiting times and interactions with staff. Patients have brought up that the staff "are very professional and they keep it peaceful around here unlike a doctor's office" and that they have been "respectful of our time and involvement". However, there have also been some mixed reviews on how often doctors and coordinators introduce themselves and how often they ask for patients' preferred ways of being addressed. Some patients said they were familiar with doctors' names and felt respected when asked how to be addressed, while others said they were not asked their name or how they preferred to be addressed and had a hard time figuring out names of doctors and coordinators. Due to this issue, some patients requested for staff to have name tags so they could more easily match names with faces.

Patients have also mentioned enjoying the snacks, drinks, and pizza in the waiting room and feeling comforted "looking out the window at the tree line" and being calmed by the greenery around the building. Notably, participants appreciated when personal touches were incorporated into their visits, including warm greetings, casual conversation, or the personalized care and attention they were given by staff. When asked for possible improvement, they recommended for the clinic to play some music in the waiting room to "lighten up the vibe" especially for patients with anxiety or those on their first visit who may have a difficult time just sitting in silence.

Digital Tools and Site Navigation

Among the 73 respondents, 24 participants (29.3%) cited issues with digital tools or clinic navigation. Some patients described the study device as “clunky” and “prone to errors and slow” and noted delays in data updates. For example, one patient received a medication reminder on his phone even after already taking the dose. Several participants in studies that require long waits between procedures recommended streamlining the immunization day process to limit wait times to under 30 minutes and reduce the extended delays that often leave patients feeling “forgotten”. Additional patients suggested better coordination between the imaging site and external imaging providers to reduce cancelled MRI appointments and ensure that the integration of scans into the study is done in a timely manner. Some recommendations for improvement include clearer signage, more explicit directions, and consistent inclusion of the address of the clinical center in reminder texts before visits. Furthermore, some participants wanted clearer compensation policies so that patients knew what to expect in terms of payment amounts before arrival.

Table 4 summarizes the results of current practices that seem to be working for patients and areas for improvement at the clinical center where this study takes place.

Table 4. Areas of Improvement for Clinical Sites

Domain	What's working	What to Improve
Staff Conduct	Staff consistently being courteous, professional, and attentive to patients' needs.	Ensure that name tags are visible, staff introduce themselves and staff ask patients how they would like to be addressed.
Use of Time	Patient visits usually last no more than five hours.	Stagger appointments and employ check-ins every 15 minutes or so to ensure that patients feel comfortable rather than forgotten.
Pre-visit Clarity	Communication about study visit expectations are relayed through calls or texts.	Develop a pre-visit brief page for every patient listing the agenda of each upcoming visit so patients know the expected length of the visit, fasting, and how many blood draws they will be receiving on their appointment.

Screening	Informing patients of their screen status at the clinical center.	Publish an eligibility checklist on the website or provide clear information over phone calls to reduce long-distance travel for screen-fail patients.
Digital Communication Tools	Email and calls that answer patients' questions and help clarify misunderstandings.	Ensure that patient-facing apps are user-friendly, constantly updated, and not cumbersome to use.
Wayfinding and Directions	Providing the address of the clinical center in each text reminder for appointments.	Provide signage outside the clinical center to direct patients, especially those visiting the first time, to the second floor for their visit.

Discussion

This study is one of the few studies summarizing findings from real-time patient feedback using a combination of qualitative and quantitative measures of surveying. Previous literature has reinforced that real-time feedback collection is a more powerful and useful tool for identifying operational strengths and finding gaps that directly influence patient retention and recruitment compared to retrospective surveys given a period of time after the visit[18]. By incorporating the insights of the 73 participants across distinct studies at the clinical site, we were able to identify several actionable changes that can strengthen the patient experience and, in turn, increase the likelihood of patients returning for follow-up visits and referring others to visit.

Patient Motivations

Participants had a combination of different motives for study participation. The primary motivators for their visit are for resolving personal or family health concerns, accessing new treatments, and contributing to scientific advancement which are consistent with prior research, suggesting that altruism and self-interest may both exist in clinical trial decision-making[7]. Additionally, most patients heard about the studies at the clinical center through Facebook ads and Instagram ads, and many others through online searches that directed them to the clinical center website. This shows the importance of consistent outreach efforts across multiple platforms and mediums for patient recruitment. Additionally, the majority of patients surveyed in this study came for a follow-up-visit due to the clinical site's constant reminders before each visit which helped improve patient retention as supported by existing literature confirming that patient outreach has a positive impact on a patient's likelihood of returning to care[19]. Additionally, patients were motivated to participate when they saw credible sources about the clinical center through trusted ads on social media platforms, recognizable company names, and evidence of previous studies on the clinical center's website. This highlights the importance of social proof in building the trust of patients

and improving patient recruitment which is consistent with current literature emphasizing the importance of reputation management in boosting patient retention[20]. Recognizing the diverse range of motivators and how they simultaneously play a role in patient decisions is essential in the improvement and development of new recruitment strategies that can appeal to each patient's goals and priorities[21].

Rapport with Staff

The overwhelmingly positive feedback on staff professionalism highlights that respect and building trust are essential for high retention and patient loyalty which are findings consistent and supported by existing literature[22]. Patients have often expressed that they prefer more intentional introductions, so they are able to feel acknowledged and become familiar with the healthcare staff they work with in a genuine way. Even brief, personalized interactions can reinforce the sense of belonging that encourages continued participation, because trust is built on the foundation of informed decisions and adequate communication[23]. However, there is a delicate balance between creating a professional, welcoming environment and being overly warm or enthusiastic. An excessively welcoming approach may increase placebo response[24] so clinical sites should maintain this balance carefully.

Procedural Flow and Transparency

While concerns about scheduling and time efficiency are only raised by a minority of patients, it is important to consider the consequences that result from these delays, especially those that come with frustration and confusion which impacts patient outcomes[25]. Delays, especially those between sequential steps during a visit, were a common source of dissatisfaction and this is significant because perceived waiting times can negatively impact satisfaction, regardless of the actual visit length[25,26,27]. While some of the time adjustments are outside the scope of the site as they are dictated by study design, Potential adjustments that can be made without the requirement of additional staff include staggering appointment slots to avoid overcrowding during busier hours, streamlining paperwork, and communicating clearly and effectively with patients over phone or email before and after their in-person visit. Additionally, procedural transparency is equally important because participants who reported unclear communication in areas of compensation, eligibility, and what to expect for each visit experienced significant frustration and disappointment. These findings reinforce the importance of transparent communication and detailed procedural breakdowns during consent and communication that happens before the first visit, during the visit, and between visits[21,28]. In order to prevent negative experiences that deter patients from returning in the future, some potential improvements include providing more thorough pre-visit briefings and clarifying eligibility criteria over calls or on the clinical center website to avoid any last-minute surprises for patients.

Digital Tools and Navigation

Approximately 29% of participants reported challenges with digital tools, consistent with literature documenting barriers to e-health adoption among older adults and underrepresented populations[29,30]. Usability improvements, redundant reminders, and better coordination with imaging or other facilities in the clinical system could improve participation and adherence. Studies have even shown that digital tools

can enhance patient engagement and satisfaction when designed with user-friendly interfaces and accessible features.[31,32]

Environmental Comfort

Finally, patient suggestions regarding environmental comfort highlight the importance of mood and other non-medical factors in recruitment and retention. Creating a welcoming, easy-to-navigate, and comfortable space can greatly influence a patient's perception of the overall process and make the difference between a one-time visitor and a committed participant[33]. By acting on these insights, clinical research sites can create a more welcoming patient-centered environment that can meet ethical standards and sustain long-term participation and patient retention over time. Table 5 summarizes the different domains contributing to patient satisfaction and includes recommendations adapted from the patient experience at the study's clinical site that can be useful to apply to ensure good clinical practice at other clinical sites. Strengthening these domains will make a positive impact on patient satisfaction, which promotes retention.

Table 5. Generalized Recommendations for Clinical Sites

Domain	Recommendations
Staff Conduct	· Ensure staff consistently demonstrate professionalism and courtesy while not demonstrating an excessively welcoming demeanor · Staff should introduce themselves and wear visible name tags to be more easily identifiable · Staff should ask patients how they would like to be addressed
Use of Time	· Minimize waiting times in waiting rooms and between steps of a procedure as much as possible while following a study schedule of activities · Consider staggering appointments and conducting periodic check-ins around every 15 minutes so patients feel acknowledged during waiting times in between activities such as post dose PK draws

Pre-visit Clarity	· Provide clear and accessible pre-visit information through websites, calls, or texts · Consider creating a pre-visit summary that includes the agenda, expected visit length, the number and type of procedures, and fasting requirements so patients have a better understanding of what to expect
Screening	· Communicate screening status clearly and promptly · Provide pre-screening information such as eligibility checklists online or through phone calls to reduce unnecessary travel for patients who may not qualify
Digital Communication Tools	· Ensure digital tools and apps are regularly updated and easy for patients to use when tracking their appointments · Maintain frequent and responsive communication via email, phone calls, or text messages to remind patients of their next visit and required tasks before then · Studies that require the use of digital tools should strive to make the tools as user friendly as possible with limited time of engagement involved on devices and have troubleshoot staff available as and when needed
Wayfinding and Directions	· Include the address of the clinic and visit details in appointment reminders · Provide clear signage both inside and outside of the facility, useful especially for first-time visitors

Environmental Comfort	· Offer a welcoming environment with comfortable seating, greenery, soft background music, and refreshments · The environment should feel inviting and safe because certain studies may require long visits · Relaxing elements will help reduce patient stress and anxiety
Financial Compensation	· Clearly and promptly communicate compensation policies and travel reimbursement options before trial enrollment · Make this information available from staff or the clinical site website, so patients fully understand and have an expectation towards the financial support they may receive

Conclusion

This study reinforces the importance of consulting patient experience in determining the success and ethical integrity of clinical trials. Real-time feedback from 73 participants at this particular clinical trial site provided a multidimensional understanding of the research visit experience and highlighted clinical practices to improve or continue. Most importantly, the study helped identify specific, actionable areas for operational improvement that could enhance efficiency and communication to strengthen recruitment and retention. The patient-reported experiences provided insights that complemented traditional trial metrics, allowing for a multidimensional view of care to be captured that is otherwise difficult to quantify. By implementing changes based on this feedback, other clinical research sites can enhance both participant satisfaction and retention which will contribute to more accurate collection of data and results in clinical studies[34].

Limitations

This study has several limitations. First, the analysis was based on a relatively small sample recruited over a short four-day period, which limits generalizability. Second, data were collected at a single site, reducing the ability to capture variation across different clinical settings. Additionally, because the site is a standalone clinical trial center that primarily enrolls participants who present solely for research participation rather than ongoing clinical care, there may be an increased risk of social desirability bias in some participant responses. Third, the survey tool was developed independently rather than using validated patient-reported experience measures (PREMs), which restrict comparability with other studies.

Fourth, responses reflected impressions from a single visit and may not be representative of patients' broader experiences across time. Finally, satisfaction ratings are inherently subjective and may be influenced by factors unrelated to the clinical trial itself. Despite these limitations, through the careful phrasing of questions and open-ended components, this study offers a rich qualitative and quantitative snapshot of patient experiences at a high-volume clinical trial site. It also demonstrates the utility of real-time feedback tools in providing an opportunity for improvement regarding operational and ethical standards across clinical centers[17,35,36].

References:

1. Pflugeisen BM, Rebar S, Reedy A, Pierce R, Amoroso PJ. Assessment of clinical trial participant patient satisfaction: a call to action. *Trials*. 2016;17:483. doi:10.1186/s13063-016-1616-6

2. Song L, Qan'ir Y, Guan T, et al. The challenges of enrollment and retention: a systematic review of psychosocial behavioral interventions for patients with cancer and their family caregivers. *J Pain Symptom Manage*. 2021;62(3):e279-e304. doi:10.1016/j.jpainsymman.2021.04.019

3. Au CP, Fardell N, Williams M, Fraser-Bell S, Campain A, Gillies M. Patient experiences in retinal trials: a cross-sectional study. *BMC Ophthalmol*. 2015;15:80. doi:10.1186/s12886-015-0071-6

4. Allen EN, Chandler CI, Mandimika N, Leisegang C, Barnes K. Eliciting adverse effects data from participants in clinical trials. *Cochrane Database Syst Rev*. 2018;1:MR000039. doi:10.1002/14651858.MR000039.pub2

5. Natale P, Saglimbene V, Ruospo M, et al. Transparency, trust and minimizing burden to increase recruitment and retention in trials: a systematic review. *J Clin Epidemiol*. 2021;134:35-51. doi:10.1016/j.jclinepi.2021.01.014

6. Lurie I, Levine SZ. Meta-analysis of dropout rates in SSRIs versus placebo in randomized clinical trials of PTSD. *J Nerv Ment Dis*. 2010;198(2):116-124. doi:10.1097/NMD.0b013e3181cc41b6

7. Godskesen T, Hansson MG, Nygren P, Nordin K, Kihlbom U. Hope for a cure and altruism are the main motives behind participation in phase 3 clinical cancer trials. *Eur J Cancer Care (Engl)*. 2015;24(1):133-141. doi:10.1111/ecc.12296

8. Smailes P, Reider C, Hallarn RK, Hafer L, Wallace L, Miser WF. Implementation of a research participant satisfaction survey at an academic medical center. *Clin Res (Alex)*. 2016;30(3):42-47.

9. Sawyer CS, Taylor S, Carter L, et al. Development and validation of a patient reported experience measure for experimental cancer medicines (PREM-ECM) and their carers (PREM-ECM-Carer). *BMC Cancer*. 2024;24:500. doi:10.1186/s12885-024-11963-x

10. Tyser AR, Abtahi AM, McFadden M, Presson AP. Evidence of non-response bias in the Press-Ganey patient satisfaction survey. *BMC Health Serv Res*. 2016;16:350. doi:10.1186/s12913-016-1595-z

11. Banda S, Nkungula N, Chiumia IK, Rylance J, Limbani F. Tools for measuring client experiences and satisfaction with healthcare in low- and middle-income countries: a systematic review of measurement properties. *BMC Health Serv Res*. 2023;23:133. doi:10.1186/s12913-023-09129-9

12. Dunsch F, Evans DK, Macis M, Wang Q. Bias in patient satisfaction surveys: a threat to measuring healthcare quality. *BMJ Glob Health*. 2018;3(2):e000694. doi:10.1136/bmjgh-2017-000694

13. Zini MLL, Banfi G. Bias in collecting patient-reported outcome measures (PROMs): a narrative review. *Int J Environ Res Public Health*. 2021;18(23):12445. doi:10.3390/ijerph182312445

14. Ebrahimi H, Megally S, Plotkin E, et al. Barriers to clinical trial implementation among community care centers. *JAMA Netw Open*. 2024;7(4):e248739. doi:10.1001/jamanetworkopen.2024.8739

15. Hillman SL, Jatoi A, Strand CA, Perlmutter J, George S, Mandrekar SJ. Rates of and factors associated with patient withdrawal of consent in cancer clinical trials. *JAMA Oncol.* 2023;9(8):1041-1047. doi:10.1001/jamaoncol.2023.1648

16. Emanuel EJ, Wendler D, Grady C. What makes clinical research ethical? *JAMA.* 2000;283(20):2701-2711. doi:10.1001/jama.283.20.2701

17. Al-Abri R, Al-Balushi A. Patient satisfaction survey as a tool toward quality improvement. *Oman Med J*. 2014;29(1):3-7. doi:10.5001/omj.2014.02

18. Stryker JE, Wray RJ, Emmons KM, Winer E, Demetri G. Understanding the decisions of cancer clinical trial participants to enter research studies: factors associated with informed consent, patient satisfaction, and decisional regret. *Patient Educ Couns*. 2006;63(1-2):104-109. doi:10.1016/j.pec.2005.09.006

19. Rebeiro PF, Bakoyannis G, Musick BS, et al. Observational study of the effect of patient outreach on return to care: the earlier the better. *J Acquir Immune Defic Syndr.* 2017;76(2):141-148. doi:10.1097/QAI.0000000000001474

20. Jabeen F, Hamid Z, Akhunzada A, Abdul W, Ghouzali S. Trust and reputation management in healthcare systems: taxonomy, requirements and open issues. *IEEE Access.* 2018;6:17246-17263. doi:10.1109/ACCESS.2018.2810337

21. Yu Y, Chen Z, Zhao Y, Wang Y, Zhang R, Zhou X. Medical service quality, psychological contract, and patient loyalty: an empirical study among patients in China. *Medicine (Baltimore)*. 2020;99(48):e21079. doi:10.1097/MD.0000000000021079

22. Liu S, Li G, Liu N, Wang H. The impact of patient satisfaction on patient loyalty with the mediating effect of patient trust. *Inquiry*. 2021;58:469580211007221. doi:10.1177/00469580211007221

23. O'Sullivan L, Feeney L, Crowley RK, Sukumar P, McAuliffe E, Doran P. An evaluation of the process of informed consent: views from research participants and staff. *Trials*. 2021;22:537. doi:10.1186/s13063-021-05487-2

24. Acheson LS, Clay S, McKetin R, et al. Participant experiences in a pilot study for methamphetamine withdrawal treatment: implications for retention. *Int J Drug Policy.* 2024;126:104383. doi:10.1016/j.drugpo.2024.104383

25. Alrasheedi KF, Al-Mohaithef M, Edrees HH, Chandramohan S. The association between wait times and patient satisfaction: findings from primary health centers in the Kingdom of Saudi Arabia. *Health Serv Res Manag Epidemiol.* 2019;6:2333392819861246. doi:10.1177/2333392819861246

26. Zhang H, Ma W, Zhou S, Zhu J, Wang L, Gong K. Effect of waiting time on patient satisfaction in outpatient: an empirical investigation. *Medicine (Baltimore).* 2023;102(40):e35184. doi:10.1097/MD.0000000000035184

27. Nie W. Waiting: integrating social and psychological perspectives in operations management. *Omega (Westport).* 2000;28(6):611-629. doi:10.1016/S0305-0483(99)00079-9

28. Fukami T. Enhancing healthcare accountability for administrators: fostering transparency for patient safety and quality enhancement. *Cureus.* 2024;16(8):e66007. doi:10.7759/cureus.66007

29. Bertolazzi A, Quaglia V, Bongelli R. Barriers and facilitators to health technology adoption by older adults with chronic diseases: an integrative systematic review. *BMC Public Health.* 2024;24(1):506. doi:10.1186/s12889-024-18036-5

30. Choi NG, Dinitto DM. The digital divide among low-income homebound older adults: internet use patterns, eHealth literacy, and attitudes toward computer/internet use. *J Med Internet Res.* 2013;15(5):e93. doi:10.2196/jmir.2645

31. Wang T, Giunti G, Melles M, Goossens R. Digital patient experience: umbrella systematic review. *J Med Internet Res.* 2022;24(8):e37952. doi:10.2196/37952

32. Sakaguchi-Tang DK, Bosold AL, Choi YK, Turner AM. Patient portal use and experience among older adults: systematic review. *JMIR Med Inform.* 2017;5(4):e38. doi:10.2196/medinform.8092

33. Tian Y. A review on factors related to patient comfort experience in hospitals. *J Health Popul Nutr.* 2023;42(1):125. doi:10.1186/s41043-023-00465-4

34. Lamberti MJ, Mathias A, Myles JE, Howe D, Getz K. Evaluating the impact of patient recruitment and retention practices. *Drug Inf J.* 2012;46(5):573-580. doi:10.1177/0092861512453040

35. Nicholas GC, Julie B, Kimberly A, Ron D. Review of literature on survey instruments used to collect data on hospital patients' perceptions of care. *Health Serv Res.* 2005;40(6 pt 2):1996-2017. doi:10.1111/j.1475-6773.2005.00477.x

36. Oyvind AB, Ingeborg S, Hilde H. Overall patient satisfaction with hospitals: effects of patient-reported experiences and fulfillment of expectations. *BMJ Qual Saf.* 2012;21(1):39-46. doi:10.1136/bmjqs-2011-000137