

Researching researchers: exploring the challenges of conducting research during a pandemic

BACKGROUND

Research assistants (RAs) are vital for the successful completion of research. When data collection and recruitment are disrupted, like during the COVID-19 pandemic and accompanying restrictions, the effects on RAs attempting to conduct research are unclear.

PARTICIPANTS AND PROCEDURE

This study explored RAs' perspectives of conducting research during the COVID-19 pandemic. Five RAs who had begun collecting data at a mid-western children's hospital on how a robot named MEDi[®] could help patients uphold health and safety procedures during the COVID-19 pandemic participated in semi-structured interviews.

RESULTS

Thematic analysis of the interview data identified four key themes (and sub-themes) that reflected RAs' experiences of conducting research during the COVID-19 pandemic: inspiration and motivation; research barriers; human connections and relationships; and creativity and problem-

solving. The first theme focused on the sources of RAs' inspiration and motivation to participate in research; the second focused on the barriers that affected data collection and recruitment. The third theme described the impact that human connections and relationships had on the success of the research, and the final theme explored the RAs' creativity and problem-solving approaches, which aided in navigating the challenges faced during the pandemic. The RAs overcame the challenges with positive attitudes, creativity, and collaboration.

CONCLUSIONS

Overall, the results reveal how the RAs explored creative strategies to adapt research methods to suit unanticipated circumstances and develop interpersonal skills to facilitate participation in future research and career activities.

KEY WORDS

research assistants; COVID-19 pandemic; phenomenology; thematic analysis; qualitative research

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BACKGROUND

Research assistants (RAs) contribute to high-quality research in diverse ways including literature review, data collection and analysis, and providing novel research ideas (Nelson & Petrova, 2022). They assist with maintaining the momentum of research and are frequently employed by lead investigators in academia (Mitchell et al., 2020). RAs, in turn, receive research training from the lead investigators, which assists with building self-confidence, competence, and research skills (Mitchell et al., 2020). Some RAs, however, experience doubts, anxieties, and mixed feelings while conducting research, especially where societal, health, or political issues affect research (Anwar & Viqar, 2017).

In 2020, the COVID-19 global health pandemic resulted in significant social isolation and restriction of movement (Shadmi et al., 2020). In response, many institutions including health facilities implemented new safety and isolation protocols such as introducing health screening, continuous masking, hand sanitizing, and social distancing to protect vulnerable patients and healthcare providers (Alberta Health Services, 2022). These restrictions also led to the suspension of many hospital-based research projects, reducing the ability of RAs to perform their research responsibilities (Aksoy et al., 2021; Nguyen et al., 2022). Amidst these circumstances, RAs may have felt at risk of contracting COVID-19, regardless of low case counts in many research locations (Shadmi et al., 2020). Consequently, some RAs may have had doubts and anxieties about their responsibilities (Aksoy et al., 2021).

Several studies of RAs' experiences conducting research in challenging circumstances have revealed that with adequate support, RAs can overcome seemingly complex situations and emerge with self-confidence, expertise, and new skills (Aksoy et al., 2021;

Anwar & Viqar, 2017; Nguyen et al., 2022). Such support could be in the form of mentorship and guidance through investing energy and time in training RAs to encourage them to overcome seemingly challenging situations (Nguyen et al., 2022; Shadmi et al., 2020). For instance, graduate and undergraduate students working as RAs amidst political instability and cultural disagreements, who received support, training, and guidance from their lead researcher, stated that they learned the importance of tolerance, communication, self-confidence, and relationships while conducting research (Anwar & Viqar, 2017; Nguyen et al., 2022; Shadmi et al., 2020). However, few qualitative studies have provided an in-depth account of RAs' experiences (Aksoy et al., 2021; Nguyen et al., 2022; Tremblay et al., 2021). Qualitative approaches to exploring these issues can provide more comprehensive insights and understanding of RAs' perspectives in these environments (Creswell & Poth, 2018; Tremblay et al., 2021).

Research assistants in the present study began collecting data in June 2021 for a pilot project on the use of a socially assistive robot named MEDi[®] (see Figure 1). Given the robot's demonstrated ability to calm anxiety through distraction and play (Beran et al., 2021; Farrier et al., 2020), it was used with the purpose of reducing stress associated with adhering to COVID-19 health and safety protocols. As patients with various health needs and their caregivers arrived at the front entrance of the hospital to visit any of the clinics, the RAs approached those waiting in line at the screening station to interact with MEDi[®], who provided verbal instructions and encouragement to adhere to the COVID-19 restrictions such as hand sanitizing and wearing a facemask. With accompanying actions, MEDi[®] stated,

"Hello [child's name], my name is MEDi[®]. I live here at the hospital and meet lots of kids like you. I just wanted to let you know about two jobs we have to do today. The first job is to sanitize your hands when you come in or touch something, and your second job is to wear your mask that the screener gave you. We are so lucky to have these screeners like [screener's name] to help make your visit safe and fun! Thanks [child's name] for remembering your two jobs. Do you want a sticker? Awesome! Do you want to see me dance before you go?" [Child selects a dance].

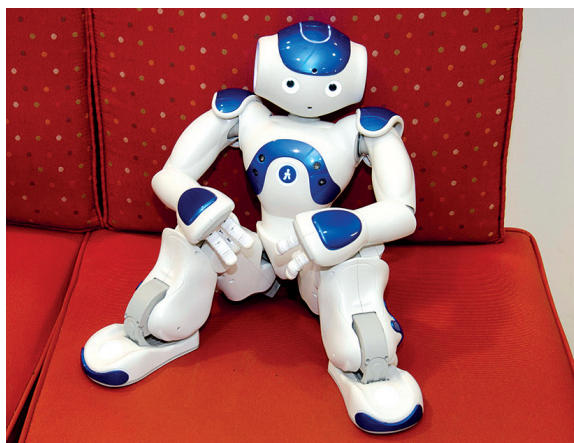
Then the RAs asked them to complete a survey about their experience. In total, the RAs' tasks were to recruit participants, administer consent, operate MEDi[®], and collect data.

The effects of the COVID-19 pandemic, and the resultant frequent changes in hospital safety protocols, affected study recruitment and the completion of this study. Given the increasing evidence of the distressing effects of pandemics on society, patients, and healthcare workers, such as stress, anxiety, and burnout (Aksoy et al., 2021), it is important to explore

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Figure 1

MEDi[®] robot



how students volunteering as RAs to gain work-related experience were affected while attempting to conduct this pilot study during a pandemic.

We applied a phenomenological approach to exploring the lived experiences of purposely selected RAs to understand how they navigated research challenges during the COVID-19 pandemic. This study also explores how RAs adapted to the stressors they faced and built relationships along the way.

PARTICIPANTS AND PROCEDURE

This research received ethics approval (REB21-2071_REN1) and was conducted approximately a year after the 2021 MEDi[®] pilot study had ended. A research team member introduced the present study to all RAs ($N = 9$) who had collected data in that study. A total of five RAs (response rate = 55.6%) agreed to be interviewed. They comprised two male RAs and three female RAs in graduate ($n = 2$) and undergraduate ($n = 3$) academic programs at the time of the pilot study. These RAs had volunteered at various times at this Midwestern children's hospital and the 2021 MEDi[®] study was one such volunteer opportunity. The RAs who agreed to be interviewed were then contacted by another research team member, who emailed the RAs further information about the study such as the purpose, the interview process, confidentiality measures, and a copy of the consent form.

We conducted video-recorded, semi-structured interviews with RAs via Zoom. The interview guide included 14 open-ended questions. These questions were designed to encourage the RAs to extensively describe their experiences of conducting research during the pandemic (Corbin & Strauss, 2008). Prior to beginning an interview, the consent form was reviewed with each RA to ensure that the written version had been read, accepted, and confirmed to participate in the study. The RAs were allowed to decline to answer questions that made them uncomfortable. The interviews lasted 45-60 minutes, with a backup recording on an audio recorder.

Data transcription occurred in parallel with data collection to become familiar with and begin to reflect on the data early in the process. Each interview recording was transcribed by the primary researcher within one week, according to recommended practice. Phenomenological data analysis was used to analyze the interview transcripts (Giorgi, 2009; Larkin et al., 2021). Using this approach, two research team members read and re-read the transcripts to become familiar with the data (Giorgi, 2009; Larkin et al., 2021). Both team members then analyzed each interview in duplicate, to understand and code what the participant was trying to express. They made spontaneous notes of the areas of interest that arose from the data by highlighting significant statements,

sentences, or quotations/codes from the transcripts (horizontalization) that offered insight into the phenomena experienced (Creswell & Poth, 2018). Next, both researchers identified and organized links and commonalities across codes into themes. Some of these themes were combined into broader themes and then narrowed down into essential points (Creswell & Poth, 2018; Giorgi, 2009).

We applied the processes of researcher triangulation and member-checking to ensure the credibility of our analysis and presentation of findings. The research team conducted independent dual analyses of interview transcripts and met often to discuss interpretations and finalize data codes and broader themes (Creswell & Poth, 2018). Researcher triangulation enabled the team to gain insights into each others' perspectives and interpretations of interview data, and further ensure that our analysis was directly derived from study data. A third research team member reviewed the agreed-upon themes, to ensure the credibility of the findings. Finally, we conducted member checking by contacting all interviewed RAs to verify that the findings and quotations attributed to them accurately represented participant perspectives (Creswell & Poth, 2018). Notes were maintained as an audit trail to further contribute to the trustworthiness of the findings (Corbin & Strauss, 2008).

RESULTS

Our analysis generated four main themes with sub-themes, as shown in Table 1: (1) inspiration and motivation; (2) research barriers; (3) human connections and relationships; and (4) creativity and problem-solving.

INSPIRATION AND MOTIVATION

All RAs had interacted with MEDi[®] while volunteering at the children's hospital, before participating in this study. The RAs commented on how these positive clinical experiences with MEDi[®] inspired them to be involved in the research. For instance, seeing MEDi[®]'s positive impact on children and parents in various clinical situations inspired the RAs to volunteer for a research project with MEDi[®]. One RA remembered: "I helped with the translation of MEDi[®] from English to Spanish, so I knew MEDi[®] already from before... so when I saw what we were doing with MEDi[®], I kind of took interest... I feel like I could help out" (RA₂).

Another RA recounted, "I had been volunteering with MEDi[®]... before COVID, I would just take him down to day surgery and hang out with the kids... and I enjoyed that... So, when it kind of came up, this uh, the project that we were doing, I was just 100% on

Table 1*Summary of main and sub-themes*

Themes and sub-themes	Description
1. Inspiration and motivation	Reasons why RAs decided to join the MEDi® research and subsequent impact on their career plans.
2. Research barriers	Challenges faced during the MEDi® research.
a. Conflicting RA responsibilities	
b. Navigating organizational policies and COVID-19 restrictions	
c. Patient/family reluctance	
d. Managing available resources	
3. Human connections and relationships	How the RAs initiated and maintained human connections which helped champion the research.
a. Support and self-care	
b. RA-participant connections	
c. RA-team lead connections	
4. Creativity and problem-solving	How the RAs navigated challenges during the MEDi® research.

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board. I, I wanted it to happen... no questions about it... I wanted to be involved" (RA₄).

These volunteering opportunities at the hospital and RAs' interactions with MEDi® were recalled as being positive experiences: "When I saw the impact MEDi® had to bring joy, bring happiness... it brought me joy to see how much joy they (the children) had... it felt good... it was a wow factor for me... just how much a robot can do for a child" (RA₁).

Curiosity was another reason the RAs were inspired to join the research project. After working with MEDi® at various times before the pandemic, some RAs sought to compare their volunteering experiences before the pandemic with volunteering during the pandemic. One RA expressed that the "research opportunity sounded interesting, and I was happy to be a part of it... especially just the unique scenario during the pandemic" (RA₃). Another RA said, "I was really interested in what kind of response I would see... if there are any differences... because I wanted to personally see what it was like and interact with people in a COVID environment at a hospital. I think that's why I ended up joining" (RA₂).

Participating in the research also appeared to positively influence RAs' future career choices. Some RAs were sure of their career paths, but those plans were altered by the pandemic. For others unsure of their future careers, the research helped define their career pathways. One RA recounted: "...when I started volunteering at the children's hospital... I was getting more interested in research... the interface of how research and program planning can help people... I pursued that further and continued my passion for public health and developing programs" (RA₁). This participant subsequently pursued a master's degree in public health and research.

Despite the challenging circumstances faced, the RAs recalled positive memories from their research experiences, which eventually influenced their need to be a part of the solution to child health problems. They felt fulfilled and grateful for their research and learning experience: "...it was a very fulfilling experience to be able to lead a research project and learn and make mistakes... it was a very, umm, still a very meaningful experience" (RA₁).

RESEARCH BARRIERS

The RAs encountered various barriers. These barriers have been categorized into four sub-themes: (a) conflicting RA responsibilities, (b) navigating organizational policies and COVID-19 restrictions, (c) reluctance, and (d) managing available resources.

Conflicting RA responsibilities. Most RAs had dual roles in the hospital where this research was conducted, and occasionally experienced role conflict that impacted their ability to support the research. For example, to reduce waiting time at the hospital's front entrance, the RAs needed to forgo data collection to assist with managing line-ups. Furthermore, when tension occurred among hospital visitors during screening, the RAs often played MEDi®'s behaviors to calm the situation rather than recruit participants. One RA recollected, "...yeah there's the odd time that the screeners and the supervisors would get pulled away to deal with those difficult people who weren't wanting to follow the rules" (RA₃). These conflicting responsibilities seemed difficult for some RAs to manage: "It was hard to multitask while screening because sometimes we would have busy things, and I'm trying to do the research, I was

trying to look at how the kid reacted right? So, a lot of things going on” (RA₅). Eventually, the RAs were unable to continue data collection due to changing hospital procedures during the pandemic.

Navigating organizational policies and COVID-19 restrictions. Another barrier that the RAs faced was the need to navigate the policies and restrictions created by the province’s health administration and implemented by the hospitals. Some of these policies included wearing masks, hand sanitizing, and limiting the number of visitors entering the hospital.

Masking. This mandate was the most frequent challenge that the RAs faced. The masks covered half the face of the participants and the RAs relied heavily on verbal and nonverbal cues to collect data and gauge participants’ responses. As RA₂ stated, “...so, when you have a mask on you are covering half of your face, so the little facial cues that you would normally see in children or parents are very difficult to catch”. Masking also created a barrier to recruitment. As RA₄ remembered, “...there were a few parents that did cite the mask and COVID as a reason they didn’t want to do it [research]” (RA₄).

Social distancing. Social distancing was necessary to prevent the spread of the COVID-19 virus. The research location was at the hospital entrance, and for the RAs to be safely distanced, they sometimes were required to move into the hallways. This distancing raised privacy concerns when interviewing parents because they were uncomfortable disclosing information in an open hallway space, compared to a more private area, with the researchers. RA₂ recollected, “...you know you weren’t able to have as many volunteers in the same space or even in the hallway... we had to make sure we’re... spaced apart...I think it’s more of that privacy concern really...but you’re able to be in like more of an enclosed room with MEDi® and the patients, right? And with COVID and restrictions, you can’t, you couldn’t have that” (RA₂).

Being in such open spaces caused otherwise private encounters to inadvertently become public events, “Unfortunately... it was in the hallway so, like everyone can hear you, know what’s going on, and so if someone is frustrated or anything, it impacts the study” (RA₂). Another RA remembered, “...and we’re in a shared environment and that does affect... if we were doing a research study and someone over there’s having an argument, this inadvertently does affect our experience even as researchers” (RA₁).

Limiting the number of visitors. To manage the spread of the COVID-19 virus, screeners and RAs were stationed at the hospital entrance to ensure that only one parent was allowed at a time to visit their sick child. These limitations caused a build-up of negative emotions, especially among parents. RA₅ stated, “...the rules changed, they were not allowing like a second, like a parent to come in, only one parent for certain things, no siblings” (RA₅). Another RA

also recollected, “...the screeners will have to say that they’re not allowed in, and there’s not much flexibility around it... hospital visits are not always the most pleasant thing, especially since their children are hospitalized and they’re just trying to visit. COVID made things worse because only one parent or one family member was able to visit at a time” (RA₂).

This restriction created a tense environment for data collection, especially for those parents who had traveled from remote areas: “...it impacts how people perceive the invitation to participate, uhm, when you know the person next to them is having struggles with just getting into the hospital in general, or they are barred from entering. It just creates not a very positive environment” (RA₂).

The resulting tension sometimes escalated beyond the RAs’ control. They had to halt recruitment to ensure safety or until the environment was more peaceful. One RA recalled that “if it escalates a lot, we try to retract ourselves quite a bit because we don’t want to add more fuel to the fire essentially or add more, like static noise to the already not-so-good environment” (RA₂).

Patient/family reluctance. The RAs were unable to collect sufficient data because of the reluctance of some parents to participate in this study. They seemed to feel stressed by the hospital rules and regulations established to uphold health and safety procedures, and some disagreed with these rules: “... there were definitely patients who came in already... agitated... we tried to ask every parent, they were like ‘No, they’re not going to do it,’ they’re already mad about putting on a mask, why would they even wanna attempt screening?” (RA₁).

Another issue that affected data collection was skepticism amongst potential participants. Some parents were initially interested, listened for a while, then would state their disbelief in the research and simply walk away. RA₄ explained: “We would start talking about it and they will be like, ‘No, I don’t believe in that’ and keep walking... yeah, parents were stressed... some were just not interested in research... I feel uh, they just like heard about it, they listened, and they were like not worth my time, that’s all” (RA₄).

Managing available resources. According to the RAs, all logistics and resources necessary for the success of the research were available prior to its commencement. However, due to several changes in hospital COVID-19 safety guidelines, some resources were reorganized to accommodate these rules and regulations. These efforts altered the RAs’ ability to smoothly conduct the research. For instance, to manage the available space left after adhering to social distancing, the research location moved into the hallway where there were echoes and unwanted noise, making communication difficult. One RA remembered, “...sometimes the sounds, especially, it’s a hallway.

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Sometimes that sound can get a lot to become a fault... but I think that's just the thing you have to live with... when your research space is a hallway" (RA₂).

Time was difficult to manage. To conduct timely recruitment, the volunteer hours were organized into shifts with assigned tasks. However, despite the effective collaboration within the research team, some RAs talked about the overwhelming nature of their tasks during their shift when their colleague was absent. One RA recollected, "I think I was by myself maybe once or twice, it just felt like a little bit too much on my plate at once. I wasn't able to effectively get everything done... I would have to be getting the paperwork, they would be signing, then I would have to get them to hold on for a second, and then get MEDi[®] programmed. So, yeah, just having enough people to distribute the tasks" (RA₄).

Furthermore, parents were not allowed to arrive more than 15 minutes early for their child's appointment; thus, there was insufficient time to conduct research when parents arrived. This urgency caused visitors to be impatient, and consequently reluctant to take part in the research. RA₄ recalled, "...they couldn't show up to their appointment more than like 15 minutes before... there was some sort of time/period where they were allowed in, so I feel like a lot of people were rushed, not willing to take a little bit of extra time to do like answer some questions or to talk about things" (RA₄).

HUMAN CONNECTIONS AND RELATIONSHIPS

The RAs initiated and maintained several relationship networks and self-care strategies during the research process that assisted with managing the challenges of conducting the research. These were categorized as (a) support and self-care (b) RA-participant connections; (c) RA-team lead connections.

Support and self-care. As the RAs worked together, they developed collaborative relationships, which helped them conduct the research work. One RA said, "...we would all get organized, make sure MEDi[®] was charged up and operating, and head down to the front entrance. Typically, we had one person who was responsible for playing the program on MEDi[®]... one person designated to operating MEDi[®], and one other person taking care of the forms and making sure the consent was communicated and signed, so it was nice to have support and work off each other a little bit" (RA₃).

The RAs communicated with each other and applied a coordinated approach to managing problems such as dealing with lineups at the front entrance: "To navigate the lineup we definitely collaborated with the screeners and we were very, very, very communicative" (RA₁). The communication channels were sustained through congenial relationships that

developed among the RAs. Despite meeting for the first time, they connected and were friendly with one another: "Everyone was... I was very friendly with all of them and the screeners, I didn't know any of them at the start... everyone was super nice. We had a great team, everyone liked everyone" (RA₄). Another RA said, "...it was very positive, we worked well together with the research and even in down time, being able to connect with them... they were very friendly and concerned, and there's the dynamic we developed for sure... it just comes down to... the positive interactions we did have" (RA₃).

These relationships allowed the RAs to provide emotional support to one another: "...we all kinda felt the same way and we all talked about it and leaned on each other because... when we would get those things, it's kind of hard to just take it in by yourself right? I think, like, when you talk to somebody else it makes it better" (RA₅).

When asked if the pandemic restrictions had negatively impacted their relationships with one another, one RA expressed that, "I don't think it impacted the relationship. It honestly probably brought us all closer because we're dealing with a few more challenges with the patient... everyone was dealing with that and because we all, understood... that we are all going through that, it gave us stuff to talk about, stuff to bond over, I feel like it brought us closer" (RA₄).

The RAs also relied on support from family and friends outside of the research group, which helped the RAs develop additional coping strategies. For example, the emotional and physical effects of the research on some RAs caused them to seek encouragement and guidance from family and friends. One RA remembered, "I think the support of friends, family, and workers really helped me... I think it's important even during COVID to have that communication, those support structures... so that you are not shouldering that burden and stress" (RA₁). At other times, they needed to apply self-care. RA₅ explained, "Yeah, at the beginning it was hard because I never experienced that type of pushback. So, it was hard and... you'll have to step out, and kind of take a minute for myself" (RA₅). Another RA said, "I think it's very important to keep yourself healthy, and happy, that's what helped me during the pandemic... just trying to stay active as much as I could" (RA₄).

RA-participant connections. To collect data and navigate parents' reluctance, the RAs sought to establish connections with parents and children. Strategies included empathizing with the parents' stressful situations, maintaining eye contact due to the masking mandate, and engaging in friendly conversations.

"I think... trying to make eye contact like, kind of like, connect with them and not, not rush through the process... eye contact was big... a lot of people were just kind of scatterbrained... and like worried about getting to their appointment on time... So, it was real-

ly helpful to kind of gauge how they were feeling and if they wanted to participate in the research study” (RA₃).

By speaking calmly and reassuringly, the RAs connected with children who were intimidated by adults wearing a mask. They engaged and encouraged children and their parents to participate in the research project. As one RA recalled: “...there were definitely challenges with COVID that made it important to make sure I was nicely saying things, in a welcoming way... that will keep kids engaged, keep parents from walking away, and make parents want to get involved” (RA₄).

RA-team lead connections. Another relationship that was viewed as essential to maintaining perspective and receiving essential support during the research process was the relationship between the RAs and the team lead (TL). The RAs received considerable support from this team lead and appreciated the leadership, mentorship, communication, and guidance provided throughout the research process. One RA explained in detail: “...like the coordination on who was where and what was going on, everything was super clearly laid out in a document TL had made and TL was coordinating all the shifts... TL was super organized... TL would always keep us in the loop too... at the start of our shift, we go up to TL, check in, get our envelope, see what we’re doing, talk to her, see what’s up, and then head down. That was, that was huge, something that made it an easy process... every time we would talk, I learned something... so it made me feel prepared for what I saw downstairs, so I think that was great leadership from TL to kind of like encourage us to come and say hi and just chat” (RA₄).

This leadership helped the RAs to navigate the challenges of the research. By receiving daily updates, understanding their daily tasks, and having efficient communication channels, the RAs felt they contributed to the study.

CREATIVITY AND PROBLEM-SOLVING

The RAs employed creativity, flexibility, and emotional intelligence to navigate research barriers. The RAs implemented various strategies to manage tension amongst parents and children, and MEDi®’s distraction abilities were also useful in dissipating this tension; “We would set MEDi® down on the floor, we would put on a little dance to kind of break up the environment... to draw attention to something else other than just that negative scenario... depending on how much it escalates” (RA₂).

Under the guidance of the team lead, the RAs employed a flexible approach to accommodate the academic schedule of those RAs whose studies were moved online because of the pandemic. Research

hours were reorganized into shifts so that all RAs could contribute equally to the research. “So, like their schedule with school and everything like that, kind of fluctuated... a lot of people now doing online schooling... could sign up for shifts whenever they want” (RA₃).

For parents who were in a hurry but seemed interested in the research, the RAs were professional and friendly. Rather than insist on data collection, they encouraged parents to attend their appointments and offered to visit afterward to allow the children to see MEDi® do a little dance because “...it’s still bringing that joy” (RA₁). This way, the parents experienced a more relaxed interaction with healthcare personnel. Furthermore, the RAs understood the stressful situations that the parents faced. When people were rude and discourteous, the RAs were not offended. “It doesn’t have to do with you. It’s just the circumstances in the world... it was important to keep this in mind without taking anything too personally” (RA₃).

Overall, this research had one resonating impression among the RAs: working with children and making children happy. This attitude motivated the RAs to continue in the research despite the pandemic challenges.

DISCUSSION

We generated four major themes to represent the lived experiences of the RAs who conducted research during the COVID-19 pandemic: the RAs’ inspiration and motivation to join the MEDi® research and the impact of the research on their future career plans; research barriers; human interactions and connections that enhanced their experiences, and finally, the creativity, flexibility, and emotional intelligence that enabled them to navigate the challenges of conducting research during the pandemic. This study provides insights into how researchers can adapt to unforeseen situations.

Our first theme reveals how the RAs were inspired and motivated to help conduct the 2021 MEDi® research. Despite the challenges of the pandemic, the RAs were encouraged by the cheerful effect MEDi® had on parents and children, which stimulated some RAs’ desire to continue research and pursue a career in child health. Our findings reflect those of prior studies that identified associations between career motivations and decisions to conduct research. Naufel and Beike (2013) identified that people are motivated to conduct research by the need to gain experience to increase their career opportunities. Similarly, a qualitative study conducted in China revealed that curiosity, creativity, problem-solving opportunities, and the realization of research ambitions could inspire people to conduct research (Zhou et al., 2022). RAs in our study

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also found the COVID-19 pandemic and associated challenges to be a unique source of motivation/inspiration. Some RAs we interviewed appeared to appreciate opportunities to apply creative approaches to data collection rather than be restricted to the more structured framework that research ordinarily requires. They also voiced their appreciation of the effect of MEDi[®] on parents and children as a motivating factor in their continued participation in the research, as was the remarkable solidarity displayed by the research team when faced with a changing and unpredictable research environment. This finding may be explained by the concept of integrated regulation; according to Ryan and Deci (2020), as people recognize and identify with the value of an activity which is congruent with their interests, the result is a desire to engage more in the direction of that activity (known as a high-quality form of extrinsic motivation with integrated regulation).

Our second theme focuses on the research barriers that the RAs encountered, such as conflicting RA responsibilities. The RAs' primary role was to recruit and collect data, but they were often also required to problem-solve unique situations such as de-escalating arguments and resolving hospital triage and admissions issues. This management-type role conflicted with their research role and reduced the time for recruitment and data collection. Similarly, Kaplan's study revealed the challenges inherent in the RAs' navigation of dual roles where they were expected to conduct high-quality research and be social workers; showing empathy, being objective, and having a certain degree of intimacy with participants, to successfully recruit (Kaplan et al., 2020). These researchers further suggest that dual roles can negatively impact the ability of RAs to conduct research (Kaplan et al., 2020). To mitigate this problem, principal investigators could ensure that the role of the RA is clearly defined, provide some training on the use of friendly communication strategies, and refer any concerns about participants' well-being to researchers and other resources.

Another barrier encountered in our study was the need to navigate the provincial health service's organizational health and safety policies, implemented by hospitals (Alberta Health Services, 2022). These policies altered and then suspended recruitment and data collection. The masking requirements, for instance, were identified as a significant barrier to patient engagement. Similar studies reported that masking policies can significantly affect interactions with specific populations such as individuals suffering from hearing loss or neurotypical disabilities (Mehta et al., 2020), where verbal and nonverbal cues are critical for communication (Ten Hulzen & Fabry, 2020). In our study, the masking rule was especially difficult for the RAs to navigate as it hampered non-verbal communication, causing them to attend carefully to

nonverbal behavior and eye contact, while operating the robot to capture children's attention.

Another organizational restriction that affected participant recruitment was the time limit placed on hospital visits. RAs commented that parents were reluctant to engage with the RAs due to the rush to arrive at their appointments. Chatting and informal interactions encourage familiarization between researchers and participants, which helps to put participants at ease and encourages participation in the research process (Creswell & Poth, 2018). However, increased hospital visitation restrictions and appointment delays limited the RAs' ability to talk with parents and decreased opportunities to encourage research participation. Researchers facing similar time-limited constraints may achieve patient participation if recruitment strategies are tailored to prioritize participants' time constraints. For example, the first contact with research participants could be short and serve as an opportunity for scheduling a virtual or in-person interaction at a later date for data collection.

The hospital's social distancing requirement presented another barrier to our study. The RAs found it difficult to establish a safe and trusting environment for parents and children while simultaneously adhering to the physical distancing policy. Trust between participants and researchers cannot be effectively maintained at a distance but requires some proximity between parties to maintain research credibility (Tremblay et al., 2021). In the present study, social distancing while wearing face masks required the RAs to increase the volume of their voices, despite the presence of people within hearing distance, likely making families reluctant to share personal information in such an environment. Researchers have proposed using virtual interactions to manage privacy in these instances as well as digital texts, and audio or video diaries (Reiners, 2012; Southerton et al., 2022; Tremblay et al., 2021).

The third theme in this study focuses on the importance of interpersonal connections among the RAs, RAs' family and friends, the research team lead, and the participants. Interpersonal connections seemed to contribute to the RAs' resilience and positive memories of the research experience. These interactions also enhanced communication, coordination, and trust, which assisted with managing recruitment, physical stress, and emotional challenges during the project.

There is anecdotal evidence that when RAs conduct research, they may experience stress caused by fears of potential emotional harm or concerns regarding being viewed unfavorably by others (Naufel & Beike, 2013). Similarly, some RAs in our study recalled experiencing emotional and social stress that negatively affected their research experiences. They were rudely addressed, ignored, or experienced dis-

approval from some parents during recruitment – especially from those who were frustrated and exhausted by the various pandemic restrictions. Some RAs stated that in these instances, they relied upon self-care strategies, and relationships with family and friends to mitigate the impact of these stressful periods. The potential for negative experiences with research participants should be openly discussed with RAs as a way of normalizing and preparing them to navigate these situations. They can also be provided with coping strategies to enable them to better prepare to manage these experiences. RA-participant interactions proved meaningful for the RAs. Being able to successfully develop rapport and provide reassurance to families through the use of empathetic and supportive phrases assisted with reducing participant anxiety and encouraged participation in the study. Amid these existing circumstances, the lead researchers in our study provided leadership and guidance for the RAs. Daily access to a mentor gave them courage and strategies to manage recruitment challenges. Indeed, they expressed gratitude for this RA-team lead relationship.

A final theme in this study is the creativity and flexibility that the RAs exhibited, which encouraged problem-solving and helped them navigate research challenges. An example is the creative approach taken to manage the research hours. The RAs in our study were allocated shifts by the team lead but also had the opportunity to reschedule these shifts based on their academic schedules. Shifts were also scheduled based on hospital traffic. For instance, the RAs occasionally took a break in the mornings and collected data in the afternoons when visitors were more relaxed after completing their appointments. In a study by Kaplan et al. (2020) RAs sometimes worked long hours with few breaks and low financial compensation. In our study, the allocation of shifts enabled flexibility in managing the research hours and accompanying research tasks while simultaneously satisfying academic demands. Similarly, Tremblay et al. (2021) reported the requirement of RAs to adapt to changing rules during a pandemic while maintaining the consistency and rigor of the study. Such adaptation and flexibility are encouraged in tough research environments, to help cope with the stress of research, reduce burnout, and maintain data credibility.

In summary, while the pandemic created challenges for RAs to conduct research, it also allowed them to build relationships, identify adaptive methods to be successful in recruitment, and draw meaning from it to guide their career plans. The experience of conducting research at that time positively influenced RAs' choice of education or career paths and confirmed their need to be part of the solution to children's health problems. Overall, this study found that RAs felt fulfilled and appreciative of this learning experience.

STRENGTHS AND LIMITATIONS

One aid to our study was the RAs' prior experience in conducting research. This exposure enabled the RAs to recognize, understand, and articulate the specific differences between conducting research before and during the pandemic, resulting in a comprehensive understanding with which to explore the themes derived from this study. Conducting online rather than in-person interviews with RAs increased study participation, especially as some of them had moved to different time zones.

This research was limited by recall bias as it was conducted almost a year after the RAs' involvement in the MEDi® study. This duration likely contributed to biases regarding the details of their experiences. One participant who contracted COVID-19 complained of "brain fog" and had to think for a while to remember events. Nevertheless, similar responses were shared across RAs during the interviews, suggesting some evidence of the credibility of these findings. We also recognize that the individuals who chose not to participate in our study may have expressed additional, contradictory or unique views or perspectives; however, we were able to capture a rich trove of data relevant to our research questions and are confident in the processes we employed to ensure the credibility of our analysis. Also, occasional disruptions with the internet connection required statements to be repeated, which may have resulted in differences from what was originally expressed.

Future research practices could focus on a needs assessment of the types of administrative and psychosocial support that RAs might require during stressful recruitment and data collection experiences. It is also important to examine the sources of stress that potential participants face to determine the extent to which RAs can mitigate those stressors. Additionally, future research could investigate strategies for conducting research in non-optimal settings.

CONCLUSIONS

This research explored the experiences of RAs during a pandemic. It revealed how they have a potentially inspiring role in their courage to persevere and improvise within changing research conditions. To prepare RAs for future challenges, a combination of formal (courses, learning modules) and informal (research team discussions) approaches can focus on teaching interviewing skills, managing recruitment difficulties, and developing problem-solving strategies tailored to the specific research project that will help them successfully recruit participants and collect data. Despite all the setbacks faced by the RAs, innovative approaches and the connections developed during the research experience offer a glimpse into the oppor-

tunities created by the pandemic restrictions and the adaptive strategies required to conduct research under these types of conditions.

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