



# Exploring Health Professionals' Experiences With a Virtual Learning and Mentoring Program (Project ECHO) on Pediatric Palliative Care in South Asia

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## Abstract

Project ECHO (Extension of Community Healthcare Outcomes) is an innovative model of online education which has been proposed to enhance access to palliative care in resource-limited settings. There is limited literature describing how health care providers in low-and middle-income countries benefit from and learn from this type of training. This qualitative description study explores the learning experiences of participants in a Project ECHO program on pediatric palliative care in South Asia through focus group discussions. Discussions were transcribed, coded, independently verified, and arranged into overarching themes. We identified learning themes including the importance of creating a supportive learning community; the opportunity to share ideas and experiences; gaining knowledge and skills, and access to additional learning materials. Designing future programs to ensure a supportive and interactive learning community with attention cultural challenges may enhance learning from future Project ECHO programs.

## Keywords

palliative care, children, hospice care, distance learning, medical education

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## Background

Children with life-threatening or life-limiting conditions frequently experience significant pain or other symptoms during treatment and in the terminal phase of their disease. Palliative care can improve the management of symptoms and communication with children and their families.<sup>1,2</sup> Globally, an estimated 21 million children require palliative care annually, with 98% of these children living in low- and middle-income countries (LMICs) where access to palliative care is often limited.<sup>3</sup> Providing palliative care education and mentorship programs that are effective and readily accessible is important to improve access to palliative care for children in resource-limited settings.<sup>4</sup>

Project ECHO (Extension for Community Healthcare Outcomes) is an educational model that connects community-level health care providers in underserved areas with specialists.<sup>5</sup> ECHO uses a “hub and spoke”

design to connect a team of experts (the hub) with multiple participants (the spokes) during regularly scheduled sessions which support learning and mentorship (Figure 1). ECHO has been proposed as an effective

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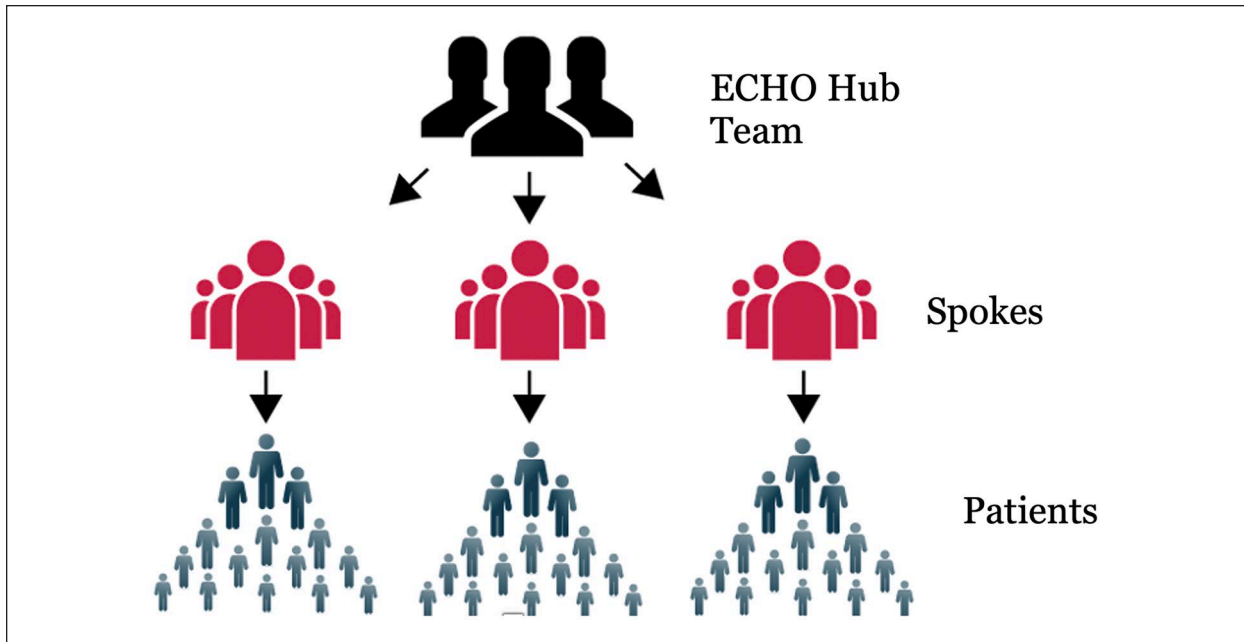
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**Figure 1.** Hub and spoke model of Project ECHO.

strategy to address the need for pediatric palliative care education in LMICs by connecting specialists with providers in rural or remote settings where there are many children needing palliative care.<sup>6,7</sup>

A recent systematic review of 52 studies, examining the impact of ECHO, reported that participants report overall favorable results for increased knowledge and self-efficacy from ECHO participation, although the strength of evidence for most of the studies was low and very few studies were conducted in LMIC.<sup>8</sup> Evidence from LMICs about the experiences of learners with Project ECHO is particularly relevant given the growing options to implement virtual training in these settings.<sup>7</sup> Understanding the learning experiences of health care providers participating in virtual training is needed to effectively adapt and implement learning programs to address the learning needs of individuals in these settings. The objective of this study is to explore the perspectives and experiences of participants in a virtual learning and mentorship program on pediatric palliative care in South Asia.

## Materials and Methods

### Program Structure

Since 2018, a collaborative team, from the Hyderabad Centre for Palliative Care (HCPC) and Two Worlds Cancer Collaboration (TWCC), has implemented 9 Project ECHO courses on palliative care, which have

been described elsewhere.<sup>9</sup> Since 2018, 15 new children's palliative care services have developed, including 10 community-based programs in India (8) and Bangladesh (2) and 5 hospital-based programs (Bangladesh (4), India (1)). Participants from 11 of these programs participated in these Project ECHO courses, while practitioners from the remaining new programs were involved in other training programs supported of TWCC and HCPC, including in-person Advanced Certificate Courses and other similar programs. The first Project ECHO course (March 2018-February 2019), comprised regular teaching sessions (90 minutes) every 2 weeks. The HCPC was the hub site, with additional specialist faculty from India, Canada, the United States, South Africa, the United Kingdom, Australia, and New Zealand also participating. The program's curriculum was developed from a review of the relevant literature, an online needs assessment of participants at the time of registration, and input from the program's faculty. Each session consisted of a didactic presentation by a clinical expert, followed by a clinical case presentation by a participant, and then group discussion. During the discussion, the session facilitator invited participants to share their experiences and encouraged interaction and discussion from all learners. All sessions used multi-point video-conferencing software (Zoom), and session recordings were available for learners to review afterwards. After each session, the key learning points and a link to a database of additional resources were shared with participants via email and social media.

## Study Population and Setting

Learners from this Project ECHO were invited by email to participate in a focus group to explore their perspectives and learning experiences with the program. Demographic and professional practice characteristics of study participants was collected. Focus groups occurred approximately in the 3 months after the program finished (February-April 2019). Focus groups had 3 to 8 participants (depending on how many participants could be scheduled for a particular time). Participants were assigned to a focus group based on availability.

## Sampling Strategy

Learners who had attended at least 5 of the 24 sessions were invited to participate in this study. By including learners who had attended a small number of sessions, we deliberately sampled a broad range of participants representing diverse learner experiences. All eligible learners were invited to participate and recruitment efforts sought to include participants from a variety of locations and professional backgrounds for maximum variation within the dataset, as well as those who were noted to be engaged participants (eg, those who frequently offered comments or suggestions during case discussions) and those who spoke less often.<sup>10,11</sup>

## Data Collection

Due to scheduling constraints and the geographical distances between participants, 2 focus groups were conducted using internet-based videoconferencing. This likely posed no barriers to participants as they were accustomed to meeting virtually for the learning sessions. Two focus groups were conducted in-person by scheduling them concurrently with other professional activities that brought some of the participants together (eg, conferences and training workshops). All focus group discussions were facilitated by 1 study team member (**MD**, female physician), with a second research team member (**EE**, female medical student) who took field notes but did not participate in the discussion. Focus group facilitator training and guidance was provided by a member of the research team with expertise in this area (**DN**). The smaller focus group sizes were to allow for adequate participation, since non-verbal cues are limited, and the facilitator had a more active role in encouraging discussion and sharing of ideas. Focus group size was also limited by participant availability. Data was collected from all study participants who were able to participate, based on availability.

We chose to use focus groups to facilitate the co-creation of knowledge between participants and provide

opportunities for knowledge to build from comments from others.<sup>12</sup> We hoped that group interaction would allow participants to interact and share their lived experiences to permit the co-construction of the multiple realities. Focus groups are often used to understand the factors which influence participants' attitudes, actions, and perceptions which is of particular interest in this study, particularly in settings where the research is exploratory, as was the case in our study.<sup>13</sup> Data collection was continued until all participants who it was possible to involve in the study had participated.

The facilitator (**MD**) was known to study participants, from her involvement as a member of the ECHO program leadership team. The participants were introduced to the facilitator at the beginning of the focus group, when a discussion of the team's goals for doing the research were explained. The research goals were also outlined in the study invitation documents.

A discussion guide was developed, informed by a literature review, to ensure that each focus group discussion covered the same topics. Three authors (**MD**, **EE**, **DN**) developed the guide (Table 1) which explored participants' learning experiences and incorporated key principles from medical education related to Project ECHO. The questions were designed to be open-ended and the facilitator encouraged exploration of topics through follow-up questions or probes until no new information was expressed.<sup>14</sup> All focus groups were audio-recorded and transcribed verbatim. Transcripts and coding were not returned to participants for comment or correction.

## Data Analysis

Thematic analysis of the focus group data was conducted within a qualitative description approach.<sup>15,16</sup> An initial coding scheme of inductive codes was developed manually by the team and refined as the analysis proceeded and the team members became more familiar with the data. The key aspects of learning from Project ECHO were also used to inform the development and organization of codes. Once the coding scheme was finalized, the transcripts were manually coded by 1 author (**EE**) and then verified independently by 2 other authors (**MD**, **SM**) to ensure consistency and accuracy in coding. Any disagreements in coding at this point in the analysis were settled by team consensus.

## Results

### Participant Characteristics

All 36 learners who were eligible were invited to participate. Twelve participants (33%) did not respond to the

**Table 1.** Typical ECHO Pediatric Palliative Care session timeline.

Section	Approximate duration	Description
Introduction	5 minutes	Facilitator welcomes participants
Didactic presentation	20-30 minutes	The speaker is introduced and leads a didactic teaching session
Discussion	10-15 minutes	Participants are invited to discuss the topic and ask the speaker questions (verbally or written in chat feature)
Case presentation	10 minutes	The facilitator leads group in discussion around the potential local challenges to implementation of treatments discussed by the speaker One participant presents a clinical case (case does not include any personal health information), using a structured template The presenter identifies 2 to 3 key questions from the case for discussion
Case discussion	15-20 minutes	Participants discuss the key questions from the case The facilitator stimulates discussion by asking questions or asking participants to share relevant experience The facilitator encourages verbal questions, but offers participants the option to write questions or comments in the chat feature
Summary	10 minutes	The facilitator summarizes the key learning points of the session
Post-session	Electronically (email, file sharing sites, and social media)	The program coordinator shares key learning points, relevant clinical resources (articles, book chapters, guidelines), and the video recording link with participants

email invitation to participate, 24 (66%) participants consented but 7 (19%) of these were unable to participate due to difficulties with scheduling of focus groups at a time which was convenient for them (n=6, 17%) or having moved to another country (n=1, 2.8%). In total, 17 learners (47% of eligible participants) participated and 4 focus groups (2 in person, 2 virtual) were conducted. Participants practiced in a variety of settings in India and Bangladesh, which are shown in Table 2. Focus groups were 45 to 60 minutes in duration.

### Themes

Two major themes and 6 sub-themes were identified through the analysis of the focus group transcripts, as shown in Table 3.

#### Theme: Benefits of Participation

Participants consistently spoke about the benefits derived from participating in this program. These benefits fell into 4 subthemes: creation of a supportive learning community; opportunity to exchange ideas and experiences; increased relevant knowledge and skills; and access to additional learning resources.

*Creation of a supportive learning community.* The sense of community and opportunity for networking afforded by the program was a salient theme across all focus groups. Becoming members of an international learning community was a meaningful aspect of participants' experiences. Indeed, participants reported that they would like

**Table 2.** Demographic Data of Focus Group Participants (N=17).

	Focus group participants
Sex	n (%)
Male	12 (70.6)
Female	5 (29.4)
Country of residence	
India	10 (58.8)
Bangladesh	7 (41.2)
Health profession	
Physician	14 (82.4)
Pharmacist	1 (5.9)
Nurse	1 (5.9)
Palliative care program coordinator	1 (5.9)
Primary practice setting	
Rural palliative care service (combined hospital and community-based service)	8 (47.1)
Hospital-based palliative care service	7 (41.2)
Hospice	1 (5.9)
Community-based palliative care service	1 (5.9)

to create a more permanent or ongoing community to continue collaboration. While the program was running, participants also constructed additional learning communities at their own health facilities, stimulated by participation in the ECHO program. Moreover, networking with other care providers both within their own country and internationally built opportunities for sharing knowledge and resources outside of the ECHO platform. The presence of supportive faculty who are

**Table 3.** Study Themes and Sub-Themes, With Illustrative Quotes.

	Illustrative quotes
Benefits of participation: Creation of a supportive learning community	<p>P16: "So, actually, I feel that I am in a community. This is more like a classroom and I can attend or share my knowledge or my experiences with another person or another people that are sitting in a different country. I feel that we are sitting in one room. I do feel that. I think it is good that I feel I am in the community in learning from different countries"</p> <p>P10: "when I saw [the ECHO facilitator] for the first time in Bangladesh, I didn't feel like I was a stranger or anything. We knew each other for one year on the ECHO platform and it's kind of helped us to speak easier"</p> <p>P6: "I felt like a family. When [the ECHO facilitator] calls on me and asks what my name is, we feel very welcome"</p>
Benefits of participation: Opportunity to exchange ideas and experiences	<p>P8: "We are different people from different culture, and the culture is not matching with everybody or the culture is not the same. Sometimes I definitely feel comfortable to raise issues regarding what we are doing in our country to compare with other countries. I think it's rational and it's helpful"</p> <p>P2: "There are cultural differences and similarities that have yet to be explored, and these ECHO sessions are very helpful for that."</p> <p>P16: "There are lots of physicians that are not aware enough to use opioids. . . So I take this opportunity as my responsibility to make aware all of the physicians that it's a good drug and you can prescribe it and how to prescribe it."</p>
Benefits of participation: Increased palliative care knowledge and skills	<p>P8: "The sessions give me the floor to learn new things in pediatric palliative care. After the case presentation there is a group discussion which is helpful. These have helped me a lot to learn new cases. I am so happy because pediatric palliative care is new for me."</p> <p>P1: "Before the ECHO session, I have a fear and feeling that I could not communicate with children. . . By the ECHO session, now I know how to communicate with children and how to talk with their parents about death and the prognosis. This is the most important thing that I learned from the ECHO"</p>
Benefits of participation: Access to additional learning materials	<p>P17: "I make a folder in my laptop on ECHO folder. I have downloaded all the videos from ECHO and I make a folder of those videos, all 26 weeks of literature and lectures,"</p> <p>P14: "She [another physician] contacted me saying that she wants to start some pediatric palliative care in their remote hospital and how to go about it. I also shared with her those resources to start getting some ideas."</p>
Challenges to participation: Time management	<p>P4: "From 9-5 we have to cover our patients, home care we have to attend, we have to go for lunch also and we have to attend ECHO Sessions, and team meetings, and case presentations. . . We have to go here and there and we have to update everything, there are a lot of people suffering."</p> <p>P8: "I wanted to make that time, but it was very difficult for me. I would get caught up in so many things"</p> <p>P11: "Coming to a monthly session is okay, but with 2 meetings each week on our side, and of course locally we have to attend so many meetings, sometimes from health commissioner, so we have to do all of those things."</p>
Challenges to participation: Socio-cultural factors	<p>P5 "English is a barrier. So, I can translate some slides in Bangla (Bengali language) and I can also share some videos. The videos are in English, but I can translate for them."</p> <p>P11 "I was feeling shy because we didn't know each other"</p> <p>P12: "Sometimes we are not comfortable and wonder if we should ask the question or not. In our culture, sometimes there are some barriers. Sociocultural things [are] an important part of our centre and culture, but sometimes it is uncomfortable for us."</p>

from a similar culture and speak the same language emerged as an important component of the learning community. Participants also note that the facilitator become a trusted teacher and welcoming presence encouraging their sustained participation.

*Opportunity to exchange ideas and experiences.* Participants identified the unique ideas and experiences which different learners brought to the program as a significant

benefit of the program. Participants recognized that the program provided a platform for sharing ideas from across a wide range of resource levels, cultures, and palliative care settings.

### *Increased Knowledge and Skills*

Participants identified the importance of gaining new knowledge and skills relevant to pediatric palliative care,

particularly as this related to their own self-identified knowledge gaps. Learning in areas which were particularly challenging, such as communication with children were also areas which participants regarded as particularly valuable.

Beyond the benefits of the knowledge itself, participants noted reductions in stress, as ECHO PPC provided them with skills to better address their patients' needs.

**Access to additional learning resources.** Participants used the additional educational resources which were provided after ECHO sessions for a variety of purposes. Participants adapted the resources to teach their colleagues or health professional students or to specifically address clinical issues with their own patients. They also shared the resources with others who had not attended the ECHO sessions, including colleagues who they were supporting or mentoring.

### Challenges to Participation

**Time management.** The difficulty of managing time constraints and balancing hectic practice schedules to attend ECHO sessions were noted as common challenges across the focus groups.

There was 1 diverse case mentioned by participant 10 relating to how missing sessions lead to stress "*A couple of times, those days were really critical, and I couldn't make it for the session. It was just not possible. Then you would feel bad that you missed this. That would really bring stress because you missed out. That reminds me of the session where I were supposed to have a Zoom call and I slept, I got up in the middle of the night and started messaging her [PI] and didn't fall asleep the whole night because I was so panicky.*"

**Socio-cultural factors.** Barriers related to language challenged participants' abilities to communicate their knowledge or to engage fully in the sessions. A reluctance to speak in the group setting due to shyness or for fear of not being understood emerged a challenge. Participants noted that cultural barriers to asking questions also presented a challenge.

### Discussion

Our study describes the perspectives and experiences of learners who participated in a 1-year online series of learning sessions (ECHO program) on pediatric palliative care for healthcare providers in South Asia. Participants identified benefits and challenges to participation, which provide new insights into how Project ECHO facilitates participant learning in palliative care.<sup>17</sup>

Supporting health care providers to change their clinical behaviors is key to efforts to improve palliative care access for patients, through Project ECHO. Medical education literature suggests that learners are more likely to engage in new behaviors if they receive positive reinforcement from influential individuals.<sup>17,18</sup> We report a novel finding related to learning from ECHO; the facilitator plays a key role in supporting learners to incorporate new clinical skills into their practice. In our study, participants specifically identified that the facilitator would summarize key messages, noting that this improved learning from ECHO sessions. Participants also noted that the facilitator became a familiar, trusted, and welcoming leader who bridged the gap between palliative care practices described by experts from high-income settings and their own practice settings. These attributes and actions of the facilitator contributed to participants' increased confidence and sense of support in adopting and performing new behaviors.

A related finding was reported for ECHO program on hypertension in the USA, where described the importance of the moderator who is both a knowledgeable disease expert and skilled instructor.<sup>17</sup> The facilitator's role in our program is slightly different, with the facilitator described as building a supportive learning community where learners felt welcome to participate in the discussion. Having a facilitator who is a member of the local culture was valued, and participants identified how that made them feel more at ease asking questions. Further studies should seek to explore the role of the facilitator in learning through ECHO in low- and middle-income countries, particularly since participants in these settings may be more hesitant to actively participate and question new knowledge, due to socio-cultural hierarchies.

We describe several additional novel findings, with learners deriving significant benefit from easy access to relevant educational resources and learners being stimulated to engage in additional learning outside of the formal ECHO sessions, with several participants describing how they conducted discussions or shared resources with their colleagues based on the content of ECHO sessions. Participants identified that these activities led to further consolidation of their learning, by increasing their confidence and providing positive reinforcement of new behaviors learned from ECHO. Participants accessed the learning resources to enhance the clinical care they provided in their workplaces, directly linking the knowledge and skills acquired from ECHO to patient care. These finding may be particularly relevant in LMICs, where online resources may be blocked by paywalls, and thus may not have been identified in previous studies in high income settings where online learning materials and expert advice may be easier to

access. Since these types of benefits have not been previously described in ECHO programs, further studies should seek to explore these findings in greater detail.

A key component of the ECHO model is “de-monopolizing” knowledge and the concept of “all teach, all learn,” emphasizing the unique contributions and knowledge that all participants bring to ECHO, both specialists and participants.<sup>7</sup> This idea was highlighted by our participants, who emphasized the value of the peer learning community, noting that this was especially helpful when approaching difficult cases in their personal practice. We also describe how a sense of community emerged among learners which persisted even after completion of the program, as participants noted that they felt connected to other group members and expressed a desire to maintain connections and pursue ongoing collaboration. Beyond simply creating a learning community, we also found that participants noted how this support and encouragement reduced their personal stress levels and enhanced their participation. These findings have not previously been reported in the literature, and further studies should seek to explore this finding in relation to the practices of clinicians in LMIC where professional networks may be different than those in high income settings.

### **Study Strengths and Limitations**

This is the first study to explore the experiences of ECHO participants in a resource-limited setting. Our findings represent the perspectives of participants from a broad range of practice locations, demographic characteristics, and professional backgrounds, suggesting that these findings have some degree of transferability. We also recognize that our findings are specific to this ECHO program and that participant perspectives are therefore influenced by the program content as well as the facilitator and participant dynamics. Given that our study was situated in South Asia, future studies could examine how geography and socio-cultural factors impact the learning experiences of healthcare providers and whether differences exist between regions or healthcare professions. A limitation of our study was the number of participants who agreed to participate but who could not participate in a focus group due to scheduling conflicts.

### **Conclusions**

Our study identified the key benefits and barriers for healthcare providers participating in a technology-enabled learning program on pediatric palliative care (Project ECHO). Making the program’s learning resources (video

recordings, presentations, journal articles) available for sharing and use outside of the ECHO sessions is particularly important in LMICs. When developing ECHO programs, educators should pay close attention to the role of the facilitators, ensuring that these individuals are aware of their critical role in creating a supportive learning community for participants. Facilitators should also be encouraged to address the cultural and resource differences in medical care in LMICs, by making suggestions and stimulating discussion about how to adapt treatment plans from high income settings to local resource constraints. These considerations may allow educators to improve the quality of learning from Project ECHO for healthcare providers in resource-limited settings.

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### **Author Contributions**

MD, DA, DN, EE, GP: Conception/Design of work. MD, SM, EE, DN, DA, JR, GP: Data acquisition, analysis, and interpretation. MD, SM, EE, DA, DN, JR, GP: Drafting/Revision of Manuscript. All authors read and approved the final manuscript.

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

This study approved by Children’s Hospital of Eastern Ontario’s ethics board, approval number of 17/201X. Written informed consent was obtained from all study participants. For participants contacted remotely, consent discussions occurred over videoconference with the investigators. Participants’ signed consent forms were sent to the investigators electronically. Participants consented to focus groups being audio recorded and transcribed and this information being published in such a manner that it would not be possible to identify any individual participants.

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**Availability of Data and Materials**

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

**References**

1. Haun MW, Estel S, Ruecker G, et al. Early palliative care for adults with advanced cancer. *Cochrane Database Syst Rev*. 2017;6(6):CD011129.
2. Zhukovsky DS, Herzog CE, Kaur G, Palmer JL, Bruera E. The impact of palliative care consultation on symptom assessment, communication needs, and palliative interventions in pediatric patients with cancer. *J Palliat Med*. 2009;12(4):343-349. doi:10.1089/jpm.2008.0152
3. Connor SR, Downing J, Marston J. Estimating the global need for palliative care for children: a cross-sectional analysis. *J Pain Symptom Manage*. 2017;53(2):171-177. doi:10.1016/j.jpainsymman.2016.08.020
4. Sasaki H, Bouesseau M-C, Marston J, Mori R. A scoping review of palliative care for children in low- and middle-income countries. *BMC Palliat Care*. 2017;16(1):60. doi:10.1186/s12904-017-0242-8
5. Arora S, Geppert CMA, Kalishman S, et al. Academic health center management of chronic diseases through knowledge networks: project ECHO. *Acad Med J Assoc Am Med Coll*. 2007;82(2):154-160. doi:10.1097/ACM.0b013e31802d8f68
6. Zhou C, Crawford A, Serhal E, Kurdyak P, Sockalingam S. The impact of project ECHO on participant and patient outcomes: a systematic review. *Acad Med*. 2016;91(10):1439-1461.
7. Arora, Smith T, Snead J, et al. Project ECHO: an effective means of increasing palliative care capacity. *Am J Manag Care*. 2017;23(7 Spec No.):SP267.
8. McBain RK, Sousa JL, Rose AJ, et al. Impact of project ECHO models of medical tele-education: a systematic review. *J Gen Intern Med*. 2019;34(12):2842-2857. doi:10.1007/s11606-019-05291-1
9. Doherty M, Rayala S, Evans E, Rowe J, Rapelli V, Palat G. Using virtual learning to build pediatric palliative care capacity in South Asia: experiences of implementing a tele-teaching and mentorship program (Project ECHO). *JCO Glob Oncol*. 2021;7:210-222.
10. Hatch JA. *Doing Qualitative Research in Education Settings*. State University of New York Press; 2002. Accessed February 4, 2020. <http://site.ebrary.com/id/10587283>
11. Sargeant J. Qualitative research part II: participants, analysis, and quality assurance. *J Grad Med Educ*. 2012;4(1):1-3. doi:10.4300/JGME-D-11-00307.1
12. Colliver JA. Constructivism: the view of knowledge that ended philosophy or a theory of learning and instruction? *Teach Learn Med*. 2002;14(1):49-51. doi:10.1207/S15328015TLM1401\_11
13. Stalmeijer RE, McNaughton N, Van Mook WNKA. Using focus groups in medical education research: AMEE guide no. 91. *Med Teach*. 2014;36(11):923-939. doi:10.3109/0142159X.2014.917165
14. Ritchie J, Lewis J, Lewis P, Nicholls CM, Ormston R. *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. SAGE; 2013.
15. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101.
16. Bradshaw C, Atkinson S, Doody O. Employing a qualitative description approach in health care research. *Glob Qual Nurs Res*. 2017;4:1-8. doi:10.1177/2333393617742282
17. Socolovsky C, Masi C, Hamlish T, et al. Evaluating the role of key learning theories in ECHO: a telehealth educational program for primary care providers. *Prog Community Health Partnersh Res Educ Action*. 2013;7(4):361-368.
18. Abela J. Adult learning theories and medical education: a review. *Malta Med J*. 2009;21(1):7.