RESEARCH

BMC Medical Education



Open Access

Cultivating compassion in care: evaluating a compassion-training intervention and exploring barriers to compassionate care in postgraduate medical education in Pakistan: a mixed-methods study

Marib Ghulam Rasool Malik^{1,6}, Sana Saeed^{2*}, Bisma Aziz^{1,4}, Shahzil Abdur Rehman Malik³, Syed Ahsan Ali⁴, Fareed Shaikh⁵, Shahzadi Resham⁶, Amna Subhan Butt⁴ and Qamar Riaz⁷

Abstract

Background Compassionate patient care is essential for improving patient outcomes and enhancing healthcare experience. However, in lower-middle-income countries (LMICs) like Pakistan, systemic barriers and a lack of structured curricula hinder its consistent delivery. This study evaluates a targeted compassion-training intervention for residents in a tertiary care hospital and explores barriers to its implementation. Given shared challenges like resource constraints, high patient loads, and gaps in formal training, these findings have broader implications for integrating structured compassion-based education across LMICs.

Methods This quasi-experimental mixed-methods study was conducted with first-year residents over a one-year period (November 2023 - October 2024). A 4-hour compassion-training session was delivered to develop compassion as a clinical competency. Quantitative data on satisfaction and self-reported compassion competence were collected using the Sinclair Compassion Questionnaire-Healthcare Provider Competence Self-Assessment (SCQ-HCPCSA) and analyzed via paired t-tests. Qualitative data from focused group discussions (FGDs) exploring barriers and facilitators underwent thematic analysis.

Results 204 residents participated. Baseline compassion competence was 4.03 ± 0.54 , with no demographic variations (p > 0.05). Participants rated sessions highly for interest (4.54 ± 0.65), relevance (4.50 ± 0.82), and interactivity (4.68 ± 0.61). Post-training, compassion competence significantly improved to 4.58 ± 0.47 (p < 0.001), with all SCQ-HCPCSA items showing significant improvements (p < 0.001). Qualitative findings revealed key barriers to practicing compassionate care, including time constraints, high workloads, and compassion fatigue, particularly in high-pressure specialties like surgery and intensive care. Institutional factors like documentation inefficiencies, financial pressures, and hierarchical workplace culture also limit compassionate care delivery. Culturally specific challenges emerged,

*Correspondence: Sana Saeed sana.saeed@aku.edu

Full list of author information is available at the end of the article



© The Author(s) 2025. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by-nc-nd/4.0/.

including language barriers, differences in patient expectations, and perceptions of compassion as a transactional service in a largely out-of-pocket healthcare system. Facilitators of compassionate care included interdisciplinary collaboration, supportive senior staff, and effective communication strategies.

Conclusions Targeted compassion-training interventions can enhance compassionate care among physicians. To ensure long-term impact, postgraduate medical education programs should formally integrate structured curricula, alongside institutional policy reforms that reduce administrative burdens and promote interdisciplinary collaboration. Future studies should explore long-term retention of training effects and assess scalability of similar curricula across diverse healthcare settings, particularly in other lower-middle-income countries.

Trial registration Not applicable.

Keywords Compassionate care, Empathy, Simulation-based learning, Curriculum

Background

Compassion, broadly defined as a deep awareness of another's suffering coupled with the desire to alleviate it, plays a pivotal role in healthcare [1]. As a core component of patient care, it has been shown to improve patient health and quality of healthcare [2], by enhancing trust, fostering hope, and encouraging higher rates of adherence [3]. Patients who perceive greater compassion from providers report higher satisfaction with the caregiving experience [4]. Beyond benefiting patients, compassionate care supports healthcare providers, reducing burnout and fostering resilience [5], as well as lowering healthcare costs and reducing potential malpractice claims [6]. Despite these advantages, the consistent practice of compassionate care remains a challenge globally [7].

The ability to deliver compassionate care is shaped by multiple provider and system-level factors. Studies have shown that high workloads, administrative burdens, and emotional exhaustion can hinder physicians from engaging meaningfully with patients [8]. Institutional inefficiencies, including hierarchical workplace dynamics and documentation requirements, have also been identified as barriers [9]. Additionally, sociocultural and economic factors influence patient expectations of compassion, with perceptions varying based on language, education level, and healthcare accessibility [9].

Healthcare systems worldwide struggle to ensure the consistent delivery of compassionate care due to various barriers. While many physicians value compassionate care, they often lack formal guidance on developing and sustaining it [10]. Although some Western interventions exist, most target medical students rather than postgraduate trainees [11]. However, compassion has been shown to decline over the course of medical education, particularly during residency [11]. This underscores the need to introduce compassion-based curricula at the postgraduate level, particularly during the crucial period of residency, underscoring the need for structured postgraduate curricula.

Efforts to integrate empathy and patient-centered communication into medical education have been observed in South Asia, including Pakistan, India, and Iran. Existing initiatives include Nurturing Empathy through Arts, Literature, and Role Play for postgraduate trainees, which employs interactive storytelling and reflective discussions to foster empathetic communication [12]. Another study incorporated a distant-learning component into empathy training, improving self-awareness and patient engagement [13]. Additionally, the integration of humanities into healthcare education has been explored as a method to cultivate emotional intelligence and ethical sensitivity in clinical practice [14]. In Pakistan, medical curricula often include patient-centered communication training, aimed at enhancing physician-patient interactions, though these efforts remain largely fragmented and informal. Despite these initiatives, there remains a notable absence of a structured, standardized curriculum dedicated specifically to fostering compassionate care among residents-in-training. Current training largely focuses on developing clinical empathy, often lacking a comprehensive approach that incorporates practical skill-building, reflective exercises, and strategies to combat compassion fatigue.

The need for compassion-based training is particularly pressing in lower-middle-income countries such as Pakistan, where the healthcare system operates largely on out-of-pocket payments. In such settings, patients from diverse socio-economic backgrounds are often vulnerable to inequities in care. Ensuring that all patients, regardless of financial status, receive compassionate, equitable care is critical for improving health outcomes. Tailoring compassion-based curricula to these unique cultural and socio-economic contexts is vital for their effectiveness.

This study presents our experience developing a targeted, contextually focused compassion-training curriculum, integrating it into postgraduate residency training at our institution. We evaluated its impact on enhancing compassion competence among junior residents and explored barriers and facilitators to compassionate care through qualitative analysis. These findings provide evidence-based insights for designing culturally relevant compassion-training models in resource-limited healthcare settings.

Methods

Study design and participants

Our study employed a quasi-experimental (pre-post), convergent mixed-methods design to evaluate both the satisfaction with and effectiveness of a targeted compassion training curriculum among junior residents in their first year of training at Aga Khan University, Pakistan (AKU). Due to this pre-post design, participants served as their own control group to compare the effectiveness of the intervention. Additionally, the study aimed to explore residents' perceived barriers and facilitators in delivering compassionate care. The study was conducted over a one-year period and included all first-year residents from the 2022 and 2023 batches (n = 210).

All residents were invited to participate in the "Compassionate Care Training Session," a one-day course delivered on various days during the first month of their residency to accommodate scheduling preferences. First-year residents were selected as the target population because early residency represents a crucial period for professional identity formation, during which trainees establish fundamental clinical communication and patient interaction skills. As postgraduate medical training in Pakistan lacks formal compassion-focused curricula, first-year residents were prioritized to integrate compassionate care principles early in their clinical practice. Residents who attended the training session and provided written informed consent were included in the study. Those who were unable to attend the session or who declined participation in the survey were excluded. Several steps were taken to maximize resident participation and adherence to the intervention. To facilitate attendance, we formally collaborated with the hospital's Postgraduate Medical Education department to integrate the training within the official residency calendar, ensuring it was a recognized component of the trainees' yearly schedule. Additionally, email reminders were sent to all participants ahead of their assigned sessions to reinforce attendance. The intervention was conducted on multiple days, allowing residents to select a session that aligned with their availability, minimizing conflicts with clinical responsibilities and maximizing engagement.

For the qualitative component of the study, focused group discussions (FGDs) were conducted, and residents were recruited through purposive sampling to ensure representation across different specialty trainings (i.e. surgical, non-surgical, and pediatrics specialties). Selected residents that provided informed consent to participation were included in the FGDs that explored their experiences during the training session and their perceptions of compassionate care in clinical practice.

The compassionate care curriculum

The compassionate care curriculum was designed as a 4-hour structured training session, tailored to Pakistan's unique socio-cultural context and integrated into the postgraduate medical education framework. Developed through a collaborative effort between clinical faculty, psychologists, medical educationists, and experienced healthcare practitioners, the curriculum incorporated interactive and experiential learning strategies to enhance residents' understanding and application of compassionate care principles.

Training sessions employed various educational techniques, including interactive discussions, video-based learning, role-playing exercises, and faculty-led reflections. Each component was designed to reinforce selfawareness, communication skills, and strategies to manage compassion fatigue. The training was aligned with international models of compassion education but was adapted to address specific challenges faced by residents in Pakistan's diverse healthcare settings (Table 1 presents a detailed breakdown of the curriculum and its components).

Data collection

For the quantitative component of the study, participants that attended the training sessions were asked to provide written informed consent to participate in the survey. The attendees were then administered the pre-session survey which was divided into two subsections:

- 1. Participant demographics: This section collected information on attendees' age, gender, specialty, type of medical school (public or private), and prior exposure to similar training or reading materials related to compassion in healthcare.
- 2. Compassion Competence Assessment: The second subsection evaluated participants' pre-session compassion competence using the validated Sinclair Compassion Questionnaire-Healthcare Provider Competence Self-Assessment (SCQ-HCPCSA) tool [18]. The SCQ-HCPCSA is a 15-item tool based on a 5-point-Likert scale (1: Not competent at all, and 5: Very competent) that allows respondents to rate their self-assessed competence in delivering compassionate healthcare in their practice and evaluates competence across various domains. The overall compassion competence score was calculated by taking the aggregate mean of the 15 items, with higher scores reflecting greater compassion competence. The tool has been previously utilized and validated by Pavlova et al. who evaluated physicans compassion competence in value discrepant workplace environments [19].

		-		· ·	<i>c</i> .					• •		
1.2	h	^ 1		NUMPER VIOLAT	-t + t	ho	com	naccion	training	CUIRRICUI	1 Im	componente
10							(()))	- וועורב מעו				
_	-	_	~		<u> </u>		~~	00001011			····	2011001121125

Component	Description			
1. Interactive Sessions	Faculty-led discussions on key concepts (sympathy, empathy, compassion) and their practical applications in clinical care. Topics included non-verbal communication, mindfulness, reflective listening, self-compassion, and managing compassion fatigue [15–17].			
2. Video-Based Learning & Debriefing	Residents analyzed simulated patient interactions demonstrating both exemplary and suboptimal compassionate care. Facilitator-led debriefing sessions encouraged reflection on communication strategies and patient engagement techniques.			
3. Role-Playing Exercises	Residents engaged in scenario-based role-plays to practice compassionate communication in realistic clinical settings. Scenarios included: 1. Counseling a worried mother about a child's vaccination. 2. Discussing care plans for a patient with a do-not-resuscitate code. 3. Communicating with a co-resident arriving late to an ER shift. 4. Breaking bad news to a patient with a cancer diagnosis. 5. Providing dietary counseling to a new parent of a child with celiac disease.			
4. Faculty-Led Discussions	Reflection-based discussions encouraged residents to share personal experiences, identify challenges in delivering compassionate care, and propose solutions. Ethical considerations and the impact of compassion on patient outcomes and provider well-being were also explored.			

Following the pre-session survey, participants underwent the 4-hour training session. Upon completion, they were asked to fill out the post-session survey, which similarly contained two subsections:

- Session Evaluation: This subsection used a standardized institutional academic session evaluation form, a 9-item questionnaire on a 5-point Likert scale (1 = Strongly disagree, 5 = Strongly agree), to gather feedback on the session's structure, content, level of interaction, and time management.
- 2. Post-Session Compassion Competence Assessment: Participants were also required to complete the same SCQ-HCPCSA questionnaire to assess changes in their compassion competence after undergoing the training. This allowed for a direct comparison of preand post-training compassion competence across the various domains evaluated.

For the qualitative component, participants were recruited for FGDs, conducted one month after the completion of all training sessions. Residents were informed about the study's purpose and the discussion format, and consent was obtained for audio-recording the discussions for transcription and analysis. Participants provided an additional informed consent form specific to the FGDs.

The FGDs were held in a designated meeting room on campus to ensure participants' privacy and comfort. A comprehensive discussion guide was developed to facilitate the FGDs, including pre-determined questions and probing prompts to guide the discussion. The FGDs were led by two members of the research team who were not involved in delivering the training sessions, in order to minimize any potential bias and ensure participants felt comfortable sharing their experiences openly (see Supplementary Material 1 for the FGD guide). Initially, three FGDs were planned, each consisting of 10 to 12 participants. As thematic saturation was reached during analysis, no additional FGDs were conducted beyond these initial sessions.

Triangulation of findings

To enhance the validity and rigor of findings, multiple levels of triangulation were employed. Methodological triangulation was ensured through a mixed-methods approach, combining quantitative assessments (SCQ-HCPCSA) with qualitative exploration (FGDs). Data source triangulation was achieved by including residents from different specialties (surgical, non-surgical, and pediatrics), capturing diverse perspectives on compassionate care delivery. Researcher triangulation was ensured through data coding independently by two researchers of the team, and differences in interpretation were resolved through consensus, ensuring reliability in thematic analysis.

Data analysis

For quantitative data, descriptive statistics were used to summarize the participants' demographic characteristics and survey responses. Continuous variables, such as participant age, session evaluation and satisfaction ratings, and SCQ-HCPCSA scores, were reported as means with standard deviations. Categorical variables, including gender, type of medical school, and the number of residents in each specialty, were summarized as frequencies and percentages. To assess changes in compassion competence following the training, paired t-tests were employed to compare pre- and post-training mean compassion competence scores, both for the overall SCQ-HCPCSA and for each individual item. Additionally, baseline compassion competence scores were analyzed across demographic variables. Comparisons for the continuous variable (age) were conducted using linear

regression, while comparisons across categorical variables (e.g., gender, type of medical school) were analyzed using independent sample t-tests. A p-value of less than 0.05 was considered statistically significant for overall comparisons, while an adjusted alpha of p < 0.003 was used to account for multiple comparisons when analyzing the 15 individual items of the SCQ-HCPCSA. All quantitative analyses were performed using STATA statistical software [20].

For the qualitative component, audio recordings of the FGDs were transcribed verbatim and analyzed until theoretical saturation was reached—defined as the point at which no new concepts or themes emerge from the data [21]. Thematic analysis were conducted to identify recurring patterns and themes within the qualitative

Table 2	emographic details of the compassionate o	care
sessions	articipants ($n = 204$)	

Variable	Mean ± SD
	or <i>n</i> (%)
Age (years)	26.61±2.21
Gender	
Male	62 (30.4)
Female	142 (69.6)
Native Language	
Urdu	162 (79.4)
Other*	42 (20.6)
City of Medical School	
Karachi	160 (78.4)
Not in Karachi	44 (21.6)
Type of Medical School	
Private institution	54 (26.5)
Government institution	150 (73.5)
Residency Department	
Medicine	49 (24.0)
Surgery	44 (21.6)
Paediatrics and Child Health	29 (14.2)
Anaesthesiology	17 (8.3)
Radiology	14 (6.9)
Emergency Medicine	10 (4.9)
Obstetrics and Gynaecology	8 (3.9)
Oncology	8 (3.9)
Family Medicine	7 (3.4)
Pathology & Laboratory Medicine	7 (3.4)
Psychiatry	5 (2.5)
Community Health Sciences	4 (2.0)
Ophthalmology	2 (1.0)
Prior exposure to training/readings regardin	g com-
passionate care	
Yes	28 (13.7)
No	176 (86.3)
Prior exposure to training/readings regardin	g empa-
thetic care	
Yes	34 (16.7)
No	170 (83.3)

data. This involved systematically working through the entire data set, ensuring that each data item was given equal attention, and exploring any noteworthy aspects that could form the basis of broader themes. Unique codes were assigned to represent key themes, with relevant data from each FGD coded accordingly [22]. To enhance the credibility of findings, peer debriefing was employed—two independent researchers coded the data, and discrepancies were discussed and resolved through debriefing sessions to ensure consistency in interpretation. The qualitative data was managed and organized using NVivo software [23].

Clinical trial number Not applicable.

Results

Participant demographics

A total of 204 first-year residents participated in the compassionate care training sessions. The mean age of participants was 26.61 ± 2.21 years, and the majority were female (69.6%, n = 142), with 30.4% (n = 62) being male. Most participants were native Urdu speakers (79.4%, n = 162) and had completed their medical education in Karachi (78.4%, n = 160). Additionally, 73.5% (n = 150) of participants graduated from government medical schools, with the remaining 26.5% (n = 54) from private institutions (Table 2). The distribution of residents across specialties varied, with the majority of participants (65%, n = 133) belonging to non-surgical specialties, while 35% (n = 71) were from surgical disciplines (Fig. 1).

Baseline compassion competence

The overall compassion competence score of the participants at baseline (i.e. prior to participation in the training session) was 4.03 ± 0.54 . An analysis of the variation in baseline scores across participant demographics and residency specialties revealed no statistically significant differences between groups. Compassion competence scores did not significantly differ by gender (Male: 3.94 ± 0.54 , Female: 4.07 ± 0.53 , p = 0.097), native language (Urdu: 4.03 ± 0.56 , Other: 4.01 ± 0.45 , p = 0.818), or type of medical school attended (Private: 3.97±0.55, Government: 4.05 ± 0.53 , p = 0.334). Similarly, no significant differences were observed in baseline scores based on the specialty of residency training (Surgical: 4.03 ± 0.52 , Non-surgical: 4.02 ± 0.57 , p = 0.846) (Table 3). Furthermore, a linear regression analysis indicated that compassion competence scores did not vary significantly by age (p = 0.562).

Participant satisfaction and evaluation of the training

Participants' responses to the structed evaluation tool showed the session to be rated highly across all evaluation components, including being interesting (4.54 ± 0.65) ,



Fig. 1 Comparing the frequencies of surgical versus non-surgical specialty residents that participated in the Compassionate Care training sessions

Table 3 Variation in compassion competence scores across demographics (n = 204)

Variable	Baseline Compassion	p-	
	Competence	val-	
	(mean ± SD)	ue	
Gender		0.097	
Male	3.94 ± 0.54		
Female	4.07 ± 0.53		
Native Language		0.818	
Urdu	4.03 ± 0.56		
Other*	4.01 ± 0.45		
City of Medical School		0.193	
Karachi	4.05 ± 0.54		
Not in Karachi	3.94 ± 0.51		
Type of Medical School		0.334	
Private institution	3.97 ± 0.55		
Government institution	4.05 ± 0.53		
Specialty of Residency Training			
Surgical	4.03 ± 0.52		
Non-surgical	4.02 ± 0.57		

relevance (4.50±0.82), level of interaction (4.68±0.61), and time management (4.37±0.89). The majority of participants strongly agreed that the session was interesting (62.3%, n=127), relevant (64.2%, n=131), and engaging, especially the hands-on exercises and role-plays (63.7%, n=130). The reading materials were also well-received,

with 78.4% (n = 164) finding them relevant and useful (Table 4).

Change in compassion competence Post-Training

A significant improvement in compassion competence was observed following the training session. The overall mean compassion competence score increased from 4.03 ± 0.54 pre-session to 4.58 ± 0.47 post-session (Cohen's d = 1.09, p < 0.001). All other individual items of the questionnaire, such as making patients feel cared for, showing genuine concern, and communicating sensitively, all demonstrated significant improvements posttraining (p < 0.001 for all items) (Table 5). Furthermore, as shown in Fig. 2, while there was significant variation in the competence rating across the various items of the SCQ-HCPCSA before the training session, the ratings of the items were much more uniform post-training, with no significant variation across the items of the SCQ-HCPCSA, indicating that the training successfully enhanced self-assessed compassion competence across all evaluated domains.

Qualitative results

The qualitative findings complement the quantitative results by providing context to the self-reported improvements in compassion competence. The three FGDs were

Table 4 Participant satisfaction and overall evaluation of the training sessions (n = 204)

Question	Rating (mean±SD)	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
1. Was the session interesting?	4.54 ± 0.65	0 (0.0)	0 (0.0)	17 (8.3)	60 (29.4)	127 (62.3)
2. Was your learning today, relevant to your work?	4.50 ± 0.82	4 (2.0)	2 (1.0)	13 (6.4)	54 (26.5)	131 (64.2)
3. Were you satisfied with the level of interaction?	4.68±0.61	0 (0.0)	3 (1.5)	7 (3.4)	43 (21.1)	151 (74.0)
4. Was time management appropriate?	4.37 ± 0.89	4 (2.0)	5 (2.5)	17 (8.3)	63 (30.9)	115 (56.4)
5. Did you acquire new knowledge?	4.37 ± 0.90	3 (1.5)	10 (4.9)	10 (4.9)	66 (32.4)	115 (56.4)
6. Was the reading material relevant and useful?	4.23 ± 1.01	6 (2.9)	8 (3.9)	26 (12.8)	58 (28.4)	106 (52.0)
7. Did you participate substantially in the session?	4.24 ± 0.86	5 (2.5)	1 (0.5)	23 (11.3)	85 (41.7)	90 (44.1)
8. Do you want more session on this topic?	4.35 ± 1.01	9 (4.4)	2 (1.0)	20 (9.8)	49 (24.0)	124 (60.8)
9. Did you find the hands-on-exercise engaging?	4.48 ± 0.86	4 (2.0)	4 (2.0)	13 (6.4)	53 (26.0)	130 (63.7)

Table 5 Comparison of compassion competence before and after the session (n = 204)

Item	Pre-session score	Post-session score	Effect size*	<i>p</i> -value
	(mean ± SD)	(mean ± SD)		
Overall mean score	4.03±0.54	4.58±0.47	1.09	< 0.001
Questionnaire items**				
1. Making my patients feel cared for	4.05 ± 0.71	4.51±0.61	0.69	< 0.001
2. Showing genuine concern for my patients	4.14±0.72	4.61±0.56	0.73	< 0.001
3. Communicating with my patients in a sensitive manner	4.10±0.72	4.63 ± 0.57	0.82	< 0.001
4. Being attentive to my patients	4.08 ± 0.68	4.62 ± 0.58	0.85	< 0.001
5. Providing comfort to my patients	3.99 ± 0.71	4.55 ± 0.58	0.86	< 0.001
6. Being very supportive when talking to my patients	4.00 ± 0.75	4.58 ± 0.57	0.87	< 0.001
7. Providing care to my patients in a gentle manner	4.01 ± 0.72	4.58 ± 0.59	0.87	< 0.001
8. Speaking to my patients with kindness	4.22 ± 0.70	4.65 ± 0.56	0.68	< 0.001
9. Seeing my patients as a person and not just a case	3.92 ± 0.81	4.55±0.61	0.88	< 0.001
10. Behaving in a caring way when interacting with patients	4.12±0.67	4.60 ± 0.57	0.77	< 0.001
11. Really understanding my patients' needs	3.88 ± 0.75	4.50 ± 0.68	0.87	< 0.001
12. Establishing a good relationship with my patients	3.95 ± 0.79	4.53±0.62	0.82	< 0.001
13. Seeing things from my patients' perspective	3.80 ± 0.82	4.49±0.68	0.92	< 0.001
14. Conveying a warm presence to my patients	3.90 ± 0.77	4.57±0.61	0.96	< 0.001
15. Being sincere with my patients	4.26±0.62	4.69±0.58	0.72	< 0.001

* Effect size calculated as Cohen's d

**Adjusted alpha for multiple comparisons: p < 0.003

conducted with a subset of the training sessions' participating residents (n = 30). This included 10 residents from surgical specialties, 12 from non-surgical specialties, and 8 residents from the pediatric residency. The discussions yielded several key themes regarding the participants' experience with the newly integrated curriculum and its strengths and limitations, as well as the residents' perceptions of the facilitators of barriers in the delivery of compassionate healthcare in their practice (Fig. 3).

Reflecting on the compassionate care training and curriculum

Participants noted that a key factor in the training's success was the effective delivery of the content, particularly how facilitators made it relevant to clinical practice. The session was seen not just as an academic exercise but as reinforcement of the compassionate care residents were already striving to provide in their daily practice.

"It (the session) was really good. Especially the presentation, and the presenters. It was more about reinforcement for those who are trying to practice compassionate care." (FGD_1_Speaker_3).

Another important aspect of the training was the use of personal experiences. The facilitators' openness about their own struggles and growth during their residency helped bridge the gap between the residents and the curriculum's objectives. This personal approach not only humanized the facilitator but also made the challenges of compassionate care relatable to the residents. By seeing their own struggles reflected in the stories of someone more experienced, residents were able to view compassionate care as a realistic goal within their own careers. Personal stories helped dismantle the hierarchy often felt between junior and senior staff, making it easier for residents to see themselves progressing in their compassionate care journey.



Fig. 2 Variation in the ratings of individual items of the SCQ-HCPCSA for compassion competence among residents pre- and post-training. (y-axis: Mean rating, x-axis: SCQ item ID as per Table 4). Pre-session ratings show significant variation across individual SCQ items, as indicated by non-overlapping confidence intervals between items. Post-session ratings exhibit significant improvements across all items (p<0.001 for all), with no significant variation in individual item ratings post-session, as shown by the overlapping confidence intervals. This uniformity suggests the training effectively enhanced compassion competence across all evaluated domains



Fig. 3 Themes and subthemes derived from the FGDs with the residents

"I liked that our instructor was sharing her personal experiences of her time as a resident. It was a reminder that the seniors, who we view as role models, have been through the same thing as us." (FGD_3_Speaker_10).

The interactive format of the training was another highly valued aspect. The inclusion of residents from diverse specialties fostered cross-disciplinary learning, allowing participants to see how compassionate care could be adapted to different clinical settings.

"The idea of the training is good. It was interactive, we had residents from different fields, such as medicine, surgery, ENT, so we learned different points of view." (FGD_1_Speaker_6).

By providing an environment that encouraged dialogue across specialties, the training fostered a deeper appreciation for the diverse challenges and solutions that come with practicing compassionate care in different contexts. The diversity of perspectives also created a richer learning environment, where residents could compare their own experiences and approaches to those of their colleagues. This peer-to-peer exchange contributed to a more dynamic understanding of the curriculum's content, emphasizing that compassionate care is not a one-size-fits-all approach but rather something that can be tailored to specific patient and specialty needs.

The use of role-plays and simulated learning emerged as one of the most impactful components of the training sessions. These activities enabled residents to actively engage with real-life patient scenarios in a controlled environment, allowing them to practice compassionate care in a way that felt both safe and constructive. Roleplaying facilitated experiential learning, which is known to be more effective than passive learning methods in enhancing behavioral change.

"The roleplays were very good as well, because they showed us how we should handle various scenarios. They were like real-time situations, and we learnt how to react and respond in those situations, and how to better ourselves." (FGD_2_Speaker_3).

The interactive, hands-on nature of these role-plays allowed participants to receive immediate feedback, both from their peers and facilitators. This instant critique helped residents become more aware of their communication styles and behaviors, allowing them to refine their approach to patient care in real time. More importantly, the role-plays made the theoretical aspects of compassionate care come to life, making it easier for participants to translate what they had learned into their clinical practice. This kind of active learning was considered essential in fostering long-term behavioral change, as it enables participants to explore new approaches without fear of repercussions.

Barriers to compassionate care

Participants across different specialties highlighted how the nature of their field influences their ability to deliver compassionate care. In specialties like surgery, where much of the time is spent in the operating room, the participants felt they had limited opportunities to interact with patients, thus restricting their ability to engage in compassionate communication.

"I feel that in Surgery, especially, there are a lot of limitations. We have to go above and beyond for the patient, we spend more time in the OR, so we are not available to do so." (FGD_1_Speaker_2). This reflects a fundamental challenge: the demands of certain specialties make it difficult for physicians to devote time to the more relational aspects of care. Compassionate care, which often requires time for meaningful patient interaction, is harder to provide in fast-paced environments where time is focused on procedural tasks. The systemic expectations in surgical specialties highlight a tension between the technical and humanistic aspects of medicine. In contrast, pediatric residents expressed that managing family expectations often detracted from their ability to focus on patient care and compassion.

"In Pediatrics, the unique thing is patient's symptoms are exaggerated. Especially by the parents... we spend a lot of time doing this rather than practicing medicine and compassion with our patients." (FGD_3_Speaker_8).

A recurrent theme was the time constraints residents face, which hinder their ability to provide compassionate care. Residents frequently expressed that the fast-paced environment of healthcare leaves them with insufficient time to engage with patients beyond the immediate clinical needs. This lack of time is perceived as a major barrier to building the rapport necessary for empathetic, compassionate interactions.

"I feel like we have very limited time with each patient. And because of time limitation, we are not able to give our patients time, and the patient feels we haven't listened to them." (FGD_1_Speaker_2).

The significance of this observation lies in the connection between time and perceived quality of care. When residents feel rushed, patients are likely to perceive this as a lack of attention or care. This misalignment between patient expectations and the reality of a resident's workload can lead to dissatisfaction, with both parties feeling that the care process is incomplete. Time constraints, therefore, do not just limit compassion—they actively contribute to patient dissatisfaction and undermine the therapeutic relationship.

Long working hours and high workloads were consistently cited as factors that severely limit the ability to provide compassionate care. Residents described how fatigue from extended shifts reduces their emotional bandwidth, making it difficult to engage empathetically with patients. This physical and emotional exhaustion directly impacts the quality of care they are able to provide, often leading to a robotic, task-oriented approach.

"if we consider our working hours, like at night when we're on call... at nighttime when a patient comes, we're not really in the mental capacity to show compassion." (FGD_2_Speaker_4).

"When someone is drained, hasn't slept, or hasn't eaten, it will affect your compassionate care." (FGD_1_Speaker_6).

Additionally, financial pressures within the healthcare system created tension, with residents feeling that patients often viewed compassionate care as part of a paid service, diminishing the perceived value of their efforts.

"No matter how much kindness and care we show to our patients, they feel they are entitled to it because they have paid large amounts of money for this care." (FGD_1_Speaker_3).

Finally, patient-centered barriers such as sociocultural diversity and language differences posed significant challenges to practicing compassionate care. Participants noted that differences in education, beliefs, and language between patients and residents often hinder communication, making it difficult to build the rapport necessary for compassion. These barriers complicate interactions, as residents must navigate cultural and linguistic divides while attempting to deliver compassionate care. The lack of a common language can lead to misunderstandings, with both patients and residents feeling frustrated by the communication barriers. This not only impacts the quality of care but also strains the emotional resources of the residents.

Existing and potential facilitators

Effective communication between residents, consultants, and patients was highlighted as a key factor in facilitating compassionate care. Residents observed that clear communication from consultants about their availability helps manage patient expectations and ensures smoother transitions of care. This aspect of communication serves as a bridge between the clinical team and the patient, fostering trust in the care process.

"If a consultant tells the patient beforehand that they won't be available... patients are okay with that, they accept it, and are okay in receiving care from us." (FGD_1_Speaker_5).

Another institutional challenge raised by residents was the inefficiency of repetitive documentation, which detracts from patient care time. Participants highlighted how current documentation practices could be streamlined to save time, allowing them to focus more on direct patient interactions. "A lot of the information we write is actually a repeat... rather than writing, we should be able to update things online." (FGD_2_Speaker_2).

A recurring theme was the pivotal role of a positive attitude and supportive environment in fostering compassionate care. Residents noted that when their colleagues and team members approached their work with positivity, it had a ripple effect on the care they provided. A positive workplace culture energizes staff, even when they are exhausted or overworked.

"If someone comes into the room with a positive attitude, then everyone will be energized... you won't spread any negativity." (FGD_1_Speaker_6).

Residents also emphasized the importance of compassion among colleagues, noting that the training reminded them to extend empathy to their peers as well as to patients. This contributed to a more cohesive and supportive environment.

"The sessions taught that we as colleagues should look after each other... I feel that we are now even more conscious about it." (FGD_2_Speaker_4).

The support from seniors emerged as a critical enabler of compassionate care. Residents felt that when their seniors acknowledged their hard work, it motivated them to maintain high standards of care. Positive feedback from seniors served as an emotional boost, affirming that their efforts were noticed and valued, reflecting the importance of recognition in fostering professional development and maintaining morale.

"Support from colleagues is important. Your seniors commenting on your good work makes you feel good and do more good work." (FGD_3_Speaker_2).

Additionally, interdisciplinary cooperation was highlighted as a factor contributing to compassionate care. Residents reported that in some settings, collaboration with nursing staff and other healthcare workers created a more supportive environment. This underscores the importance of interdisciplinary teamwork in healthcare. When nurses, residents, and other staff work together, it creates a holistic care environment where compassion can flourish. The cooperative nature of these relationships enhances the overall patient experience, as staff members support each other in delivering compassionate care. "Our nursing staff is cooperative; they encourage us and they teach us so many things." (FGD_3_ Speaker_2).

The evaluation and acknowledgment of compassionate care by faculty was another point of discussion. Some residents noted that while aspects of compassionate care were embedded in evaluation forms, they were rarely commented on or acknowledged by faculty members. This lack of feedback on compassion detracts from its perceived importance, suggesting that more explicit recognition is needed.

"Our evaluation form has a communication skills section... but I don't think anyone has ever commented on my compassionate care." (FGD_1_ Speaker_6).

Lastly, participants noted that receiving gratitude from patients was a powerful motivator, reinforcing their emotional connection to caregiving and making their efforts feel worthwhile.

"Occasionally, there are those patients that take the time out and thank you. That thank you means a lot." (FGD_1_Speaker_6).

Discussion

This study provides valuable insights into compassionate care training in a postgraduate medical education setting. Our findings demonstrate that targeted training interventions can significantly enhance self-reported compassion competence among junior residents. Such improvement in compassionate care after a workshop has been previously demonstrated by McNamara et al. [24]. The significant increase in compassion competence scores across all assessed domains post-training suggests that targeted interventions can effectively enhance the ability of healthcare providers to deliver compassionate care. This aligns with existing literature emphasizing the role of structured training programs in cultivating empathy and compassion among medical professionals [16]. The observed statistically significant increase in compassion competence scores from 4.03 to 4.58 post-training also holds clinical relevance. Prior studies have linked higher compassion competence among healthcare providers to improved patient satisfaction, better adherence to treatment plans, and enhanced provider-patient communication [3, 4]. Even modest increases in self-reported compassion competence may translate into more meaningful patient interactions, increased trust, and a greater emphasis on patient-centered care in clinical practice. Furthermore, given the well-documented decline in compassion during medical training, our findings suggest that targeted interventions may play a role in counteracting this decline and reinforcing compassionate behaviors in early residency. However, future research should aim to assess whether such improvements are reflected in observable patient outcomes.

The qualitative findings further contextualize the quantitative results by highlighting the real-world barriers to implementing compassionate care. Residents consistently cited time constraints, heavy workloads, and systemic pressures, particularly in high-stress specialties such as surgery and intensive care, as limiting factors. These challenges are well-documented in the literature on compassion fatigue, particularly in specialties that require high emotional labor but provide limited patient interaction opportunities [17, 25]. Compassion fatigue has been found to be particularly pronounced in ICU settings, where the constant exposure to critical cases and emotional distress contributes to a significant decline in compassionate behaviors [26]. Additionally, residents highlighted the role of institutional factors, such as financial constraints and interdisciplinary communication issues, in impeding the delivery of compassionate care. Addressing these systemic barriers is essential to fostering an environment where compassionate care can thrive.

From a policy and practice perspective, the success of this training program suggests that compassion-training curricula should be formally integrated into postgraduate medical education at various levels. However, for these interventions to have lasting impact, they must be reinforced by institutional changes. One critical area for reform is workload management-previous studies have shown that reducing non-clinical administrative burdens allows healthcare providers to engage more effectively in compassionate patient interactions [27]. Institutions should also embed compassion-based training into structured residency evaluations, faculty mentoring programs, and clinical feedback mechanisms to sustain behavioral retention. Furthermore, interdisciplinary training initiatives involving senior physicians, nurses, and allied healthcare professionals could foster a collaborative culture of compassion, ensuring that compassionate care becomes an institutional norm rather than an isolated skill taught only to junior residents [28, 29].

Additionally, ongoing reinforcement mechanisms are crucial for sustaining compassion in clinical practice. Institutions could implement structured debriefing sessions, reflective practice rounds, and faculty-led role-modeling initiatives to reinforce compassionate behaviors. Future studies should assess whether integrating these reinforcement mechanisms alongside compassion-training interventions leads to sustained improvements in compassionate care delivery over time.

This study's strength lies in its mixed-methods design, which allowed for a comprehensive exploration of

compassionate care from both quantitative and qualitative perspectives. The use of validated tools, such as the SCQ-HCPCSA, adds robustness to the findings. However, there are several limitations to consider. The study was conducted within a single tertiary care hospital, which may limit the generalizability of the findings to other settings. Additionally, the reliance on self-reported measures of compassion competence through the SCO-HCPCSA, may introduce response bias, as participants might overestimate their abilities due to social desirability. Future research should focus on long-term follow-up assessments and explore the impact of compassion-training interventions on observable patient outcomes to further validate these findings, as well as the effectiveness of such interventions across different healthcare settings. Studies should also investigate the role of organizational culture and leadership in fostering a compassionate care environment, as these factors emerged as critical determinants of compassionate care delivery in the qualitative analysis.

Conclusions

This study demonstrates the significant impact that targeted, contextually relevant training interventions can have on enhancing compassionate care among junior residents in a tertiary care hospital setting. The substantial improvement in compassion competence, as evidenced by both quantitative and qualitative findings, underscores the importance of integrating compassionate care curricula into medical education. However, to fully realize the benefits of such interventions, systemic barriersincluding time constraints, workload management, and interdisciplinary communication-must be addressed. By fostering a culture of empathy that involves all healthcare professionals, from junior residents to senior staff, healthcare institutions can create environments where compassionate care thrives. This study not only highlights the value of compassionate care in improving patient outcomes but also underscores the need for sustainable, institutional changes to support the long-term application of these principles.

Abbreviations

- AKU Aga Khan University
- FGD Focused group discussions
- SCQ HCPCSA–Sinclair Compassion Questionnaire–Healthcare Provider Competence Self–Assessment

Supplementary Information

The online version contains supplementary material available at https://doi.or g/10.1186/s12909-025-07056-3.

Supplementary Material 1

Acknowledgements

The authors would like to acknowledge the efforts of the supporting staff and administration for the successful organization of the compassionate care training sessions, and thank the residents for their enthusiastic participation and feedback of the curriculum.

Author contributions

MGRM, SS, QR contributed to the conception and design of the study. MGRM, SS, FS and SR contributed to the design and development of the compassion training curriculum. SS, FS, SR, ASB and QR contributed to the delivery of the training to the participants. MGRM, BA, ASB and SAA were involved in the acquisition of quantitative data before and after the training sessions and MGRM, BA and SARM contributed to facilitation of the FGDs. SARM contributed to the acquisition, analysis, and interpretation of the quantitative data, while MGRM and BA conducted qualitative analyses. MGRM, SS, BA and SARM contributed to wards drafting of the manuscript. SAA, FS, SR and AS contributed to the critical review of the work. All authors read and approved the final manuscript and agree to be personally accountable for all parts of the work.

Funding

The study was funded by the Dr. Aleem Qureshi and Dr. Kulsum Aleem Developmental/Exploratory Grants for Medical Discovery, 2023.

Data availability

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

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from the Ethical Review Committees of the Aga Khan University (AKU ERC 2023-9053-26351) prior to commencement of the study. The study was conducted in full compliance with the ethical principles outlined in the Declaration of Helsinki. Participants were invited for voluntary participation, and informed consent was obtained for both the quantitative survey and the focused group discussions. Data was collected in an anonymized fashion with each participate in the study were excluded. There was no effect of this study on the subsequent assessments, promotion, or appraisal of the study participants.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Author details

¹Dean's Clinical Research Fellowship, Aga Khan University, Karachi, Pakistan

 ²Department of Educational Development, Department of Pediatrics and Child Health, Aga Khan University, Karachi, Pakistan
³Medical College, Aga Khan University Medical College, Karachi, Pakistan
⁴Department of Medicine, Aga Khan University, Karachi, Pakistan
⁵Department of Surgery, Aga Khan University, Karachi, Pakistan
⁶Department of Pediatrics and Child Health, Aga Khan University, Karachi, Pakistan
⁷Postgraduate Medical Education, Aga Khan University, Karachi, Pakistan

Received: 30 September 2024 / Accepted: 25 March 2025 Published online: 10 April 2025

References

- Durkin J, Jackson D, Usher K. Compassionate practice in a hospital setting. Experiences of patients and health professionals: A narrative inquiry. J Adv Nurs. 2022;78(4):1112–27.
- Hemberg J, Wiklund Gustin L. Caring from the heart as belonging-The basis for mediating compassion. Nurs Open. 2020;7(2):660–8.

- Khan MM, Ali A, Elbadway M, Shah N, Doomi A, Alrabayah T, et al. Balancing the scalpel and the heart: A neurosurgeon's guide to empathy. World Neurosurg. 2025;195:123703.
- Gardiner P, Pérez-Aranda A, Bell N, Clark DR, Schuman-Olivier Z, Lin EH. Self-Compassion for healthcare communities: exploring the effects of a synchronous online continuing medical education program on physician burnout. J Contin Educ Health Prof. 2024.
- Watts E, Patel H, Kostov A, Kim J, Elkbuli A. The role of compassionate care in medicine: toward improving patients' quality of care and satisfaction. J Surg Res. 2023;289:1–7.
- Trzeciak S, Roberts BW, Mazzarelli AJ, Compassionomics. Hypothesis and experimental approach. Med Hypotheses [Internet]. 2017;107:92–7. Available from: https://pubmed.ncbi.nlm.nih.gov/28915973/
- Maddox L, Barreto M. The team needs to feel cared for: staff perceptions of compassionate care, aids and barriers in adolescent mental health wards. BMC Nurs [Internet]. 2022 Dec 1 [cited 2025 Feb 24];21(1):1–16. Available from: https://bmcnurs.biomedcentral.com/articles/https://doi.org/10.1186/s 12912-022-00994-z
- Pehlivan T, Güner P. Compassionate care: benefits, barriers and recommendations. J Psychiatr Nurs. 2020;11(2):148–53.
- Sinclair S, Kondejewski J, Jaggi P, Dennett L, Roze Des Ordons AL, Hack TF. What Is the State of Compassion Education? A Systematic Review of Compassion Training in Health Care. Acad Med [Internet]. 2021 Jul 1 [cited 2023 May 11];96(7):1057–70. Available from: https://pubmed.ncbi.nlm.nih.gov/3383094 9/
- Patel S, Pelletier-Bui A, Smith S, Roberts MB, Kilgannon H, Trzeciak S, et al. Curricula for empathy and compassion training in medical education: A systematic review. PLoS ONE. 2019;14(8):e0221412.
- Bhagat PR, Trivedi KY, Prajapati KM, Chauhan AS, Shah NP, Shah RT, et al. Nurturing empathy through arts, literature, and role play for postgraduate trainees of ophthalmology. Int J Appl Basic Med Res. 2024;14(1):42–7.
- 13. Nasr Esfahani M, Behzadipour M, Jalali Nadoushan A, Shariat SV. A pilot randomized controlled trial on the effectiveness of inclusion of a distant learning component into empathy training. Med J Islam Repub Iran. 2014;28:65.
- Siddiqi DA, Miraj F, Munir M, Naz N, Shaikh AF, Khan AW, et al. Integrating humanities in healthcare: a mixed-methods study for development and testing of a humanities curriculum for front-line health workers in Karachi, Pakistan. Med Humanit. 2024;50(2):372–82.
- 15. Chochinov HM. Health care, health caring, and the culture of medicine. Curr Oncol. 2014;21(5):668–9.
- Beaumont E, Irons C, Rayner G, Dagnall N. Does Compassion-Focused therapy training for health care educators and providers increase Self-Compassion and reduce Self-Persecution and Self-Criticism? J Contin Educ Health Prof. 2016;36(1):4–10.

- Sinclair S, Raffin-Bouchal S, Venturato L, Mijovic-Kondejewski J, Smith-MacDonald L. Compassion fatigue: A meta-narrative review of the healthcare literature. Int J Nurs Stud. 2017;69:9–24.
- Sinclair S, Kondejewski J, Hack TF, Boss HCD, MacInnis CC. What is the most valid and reliable compassion measure in healthcare?? An updated comprehensive and critical review. Patient. 2022;15(4):399–421.
- Pavlova A, Paine SJ, Sinclair S, O'Callaghan A, Consedine NS. Working in valuediscrepant environments inhibits clinicians' ability to provide compassion and reduces well-being: A cross-sectional study. J Intern Med [Internet]. 2023 Jun 1 [cited 2024 Sep 30];293(6):704–23. Available from: https://onlinelibrary. wiley.com/doi/full/https://doi.org/10.1111/joim.13615
- 20. StataCorp. Stata statistical software version 15.1, college station. Texas, USA. College Station, Texas, USA: StataCorp; 2017.
- Sandelowski M. Telling stories: narrative approaches in qualitative research. Image J Nurs Sch [Internet]. 1991 [cited 2023 May 12];23(3):161–6. Available from: https://pubmed.ncbi.nlm.nih.gov/1916857/
- 22. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101.
- 23. Lumivero. NVivo (Version 14). www.lumivero.com; 2023.
- McNamara K, Smith A, Shine B, Cregan M, Prihodova L, O'Shaughnessy A, et al. Addressing obstetricians' awareness of compassion, communication, and self-care when caring for families experiencing stillbirth: evaluation of a novel educational workshop using applied drama techniques. PLoS ONE. 2022;17(11):e0277496.
- Cavanagh N, Cockett G, Heinrich C, Doig L, Fiest K, Guichon JR, et al. Compassion fatigue in healthcare providers: A systematic review and meta-analysis. Nurs Ethics. 2020;27(3):639–65.
- Xie W, Chen L, Feng F, Okoli CTC, Tang P, Zeng L, et al. The prevalence of compassion satisfaction and compassion fatigue among nurses: A systematic review and meta-analysis. Int J Nurs Stud. 2021;120:103973.
- Babaei S, Taleghani F. Compassionate Care Challenges and Barriers in Clinical Nurses: A Qualitative Study. Iran J Nurs Midwifery Res [Internet]. 2019 May 1 [cited 2025 Feb 25];24(3):213. Available from: https://pmc.ncbi.nlm.nih.gov/ar ticles/PMC6485023/
- Dietl JE, Derksen C, Keller FM, Lippke S. Interdisciplinary and interprofessional communication intervention: how psychological safety fosters communication and increases patient safety. Front Psychol. 2023;14:1164288.
- 29. Bendowska A, Baum E. The significance of Cooperation in interdisciplinary health care teams as perceived by Polish medical students. Int J Environ Res Public Health. 2023;20(2).

Publisher's note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.