


# BMJ Open What is clinician presence? A qualitative interview study comparing physician and non-physician insights about practices of human connection

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## ABSTRACT

**Objective** We sought to investigate the concept and practices of ‘clinician presence’, exploring how physicians and professionals create connection, engage in interpersonal interaction, and build trust with individuals across different circumstances and contexts.

**Design** In 2017–2018, we conducted qualitative semistructured interviews with 10 physicians and 30 non-medical professionals from the fields of protective services, business, management, education, art/design/entertainment, social services, and legal/personal services.

**Setting** Physicians were recruited from primary care clinics in an academic medical centre, a Veterans Affairs clinic, and a federally qualified health centre.

**Participants** Participants were 55% men and 45% women; 40% were non-white.

**Results** Qualitative analyses yielded a definition of presence as *a purposeful practice of awareness, focus, and attention with the intent to understand and connect with individuals/patients*. For both medical and non-medical professionals, creating presence requires managing and considering time and environmental factors; for physicians in particular, this includes managing and integrating technology. Listening was described as central to creating the state of being present. Within a clinic, presence might manifest as a physician listening without interrupting, focusing intentionally on the patient, taking brief re-centering breaks throughout a clinic day, and informing patients when attention must be redirected to administrative or technological demands.

**Conclusions** Clinician presence involves learning to step back, pause, and be prepared to receive a patient’s story. Building on strategies from physicians and non-medical professionals, clinician presence is best enacted through purposeful intention to connect, conscious navigation of time, and proactive management of technology and the environment to focus attention on the patient. Everyday practice or ritual supporting these strategies could support physician self-care as well as physician-patient connection.

## Strengths and limitations of this study

- Strengths of this study include its novelty; this is the first study to use human-centred design principles and methods to systematically define clinician presence.
- This study uses interviews with physicians and non-physicians to broaden potential options and strategies for creating presence with patients beyond those typically considered in strictly medical settings.
- Although the study population is small (n=40), this sample size is acceptable for a qualitative investigation, and was sufficient to achieve thematic saturation and coherence.

## INTRODUCTION

The practice of medicine today is challenging for a number of reasons, including data-entry requirements, rapid patient turnover, inadequate reimbursement, lack of administrative support, competing demands, litigious environments, and increased complexity of patients. The demands of practising modern medicine present many barriers to physicians’ ability to deliver humanistic, patient-centred care and uphold the ideals of medicine.<sup>1</sup>

Patient experience suffers in an overburdened healthcare system, and meanwhile the rates of physician burnout have reached alarming levels. Almost half of physicians in the USA show evidence of burnout.<sup>2,3</sup> Burnout is historically related to emotional exhaustion,<sup>4</sup> but for some clinicians may manifest as depersonalisation and disengagement.<sup>5</sup>

While it is widely understood that system-level interventions are needed to address burnout, interventions that facilitate clinician engagement and mindfulness can also be helpful.<sup>6</sup> At the individual level, successfully



being more ‘present’ may make space for physicians to reconnect with the personal rewards of clinical practice, even if little else changes.

Working concepts of ‘presence’ incorporate practice-oriented insights from across clinical care and research—including physician burnout,<sup>2</sup> patient-physician communication,<sup>7</sup> and patient-centred care<sup>8</sup>—and diverse other fields, ranging from business to education. However, there is little literature on ‘clinician presence’. Other studies addressing this concept have been focused in niche areas such as psychology/psychotherapy,<sup>9</sup> palliative care,<sup>10</sup> or family and caregiver healthcare experience.<sup>11</sup> These few studies have presented clinician presence as a state of mindfulness,<sup>9</sup> ‘compassionate silence’ originating from within a contemplative practice,<sup>10</sup> or a patient-clinician ‘shared presence’ that relies on engagement of both parties.<sup>11</sup>

Our research around defining presence seeks to outline the important elements of clinician presence, and to specifically decouple it from patient-clinician communication, which is bi-directional. Clinician presence in our view can be enacted by physicians, with or without active patient reception. Although the term is commonly used, our research question centred on identifying a universal definition for clinician presence using qualitative data from interviews with primary care physicians and non-medical professionals from diverse fields in which human connection is central.

## METHODS

We conducted a qualitative study of semistructured interviews in 2017–2018 with physicians (n=10) and non-medical professionals (n=30) in California. Team members trained in qualitative methods (CBJ, RS, DLZ, and NS) interviewed 10 internal medicine and family medicine physicians practicing in three primary care clinics at an academic medical centre, a Veterans Affairs facility, and a US Federally Qualified Health Centre (FQHC) serving primarily Spanish-speaking immigrants.

Considering the scale of barriers that medicine is facing, from rising costs to physician shortages, some have called for researchers and planners to look for solutions outside of medicine. One such approach is human-centred design, which leverages insights from stakeholders at every level of design practice, and has been specifically called for in terms of building resilience in medicine.<sup>12</sup> We employed a human-centred design approach that leveraged analogous inspiration, a strategy that has been used by engineers when there is little precedent: analogous domains must be examined as a starting point from which possible context-dependent solutions can be developed.<sup>13</sup> Since little has been systematically documented about clinician presence in medicine, we intentionally wanted to reach beyond medicine to gather insights from analogous domains. In general, human-centred design and analogous inspiration give us the opportunity to

search for elegant solutions that may already exist, but have not yet been utilised in the medical setting.

We used convenience sampling to interview 30 individuals systematically representing a variety of non-medical professions from 11 of the 25 occupation groups listed by the US Bureau of Labour Statistics (table 1). Using the concept of analogous inspiration, we intentionally targeted professionals whose work involves fostering effective connections with individuals, often under stressful circumstances. We used a convenience sampling technique to identify participants, and intentionally recruited from diverse fields to create a sample representative of the range of careers.

Overall, participants were balanced in terms of gender (55% men and 45% women), and represented a diversity of race/ethnicities while skewing white/Caucasian (60%) (table 2). Interview recordings and transcripts were stored in US HIPAA (United States Health Insurance Portability and Accountability Act of 1996)-compliant secure files, and were only available to research staff. Transcripts for clinicians were deidentified, retaining only information about role (eg, MD 1). Files were anonymous in the case of non-medical professionals, where signed informed consent was waived due to Stanford University institutional review board (IRB) exemption (#43314). Physician participants signed informed consent in accordance with IRB #42397.

Interviews explored the concept of ‘presence’ with questions about creating connection, being more present, building trust, adjusting strategies for different people, and navigating the environment during interactions with clients and patients (see box 1). All interviews were recorded and transcribed, and we used the constant comparative method to code transcripts, meeting frequently as a team to discuss and workshop qualitative themes.<sup>14</sup> Interview excerpts relevant to presence were independently analysed by two qualitative researchers (AM—MD and PhD in Anthropology; CBJ—PhD in Linguistics) to generate core elements of presence. These elements were iteratively refined into a framework using inductive coding, which enabled us to define elements of presence as they emerged from the data. Since there was not an established definition of presence prior to this work, we did not have preset codes. We discussed the definition and coding as a full research team (12 individuals with backgrounds in medicine, implementation science, health services research, physician wellness, health communication, and linguistics) weekly over the course of a month. Detailed meeting notes were kept by two project managers, and we referred back to these meeting notes from session to session. To address biases, we debated discrepancies but also recognised and listened to minority opinions. Research suggests that this kind of disagreement and welcoming of minority viewpoints results in better-quality coding and decision-making.<sup>15</sup> A working definition of presence plus the major themes supporting this definition were presented to our advisors and refined during discussions with the

**Table 1** Professionals' fields from the United States Bureau of Labour Statistics, and occupations of non-medical interviewees

Professional field/occupation groups	Occupations
Management	Hospice programme director
	Restaurateur
	Middle school principal
	CEO of a technology company
	Software company director
Business & financial/ Sales	Television sales and marketing
	Startup sales
	Specialty beverage importer
	Realtor
Community & social service	Chaplain
	Licensed clinical social worker (LCSW)
	Health promoter
Education, training & library	Teacher
	Music instructor
	High school health educator
	Psychology Professor
	Special education educator
Arts & design/ Entertainment & sports/ Media & communications	Documentary filmmaker
	Design researcher
	Professional musician
	Creative designer
	Journalist
Legal/ Protective service	Firefighter/Emergency Medical Technician (EMT) (Chief)
	Restorative justice lawyer
	Police officer
	US EPA (United States Environmental Protection Agency) enforcement agent
Personal care and service	Yoga instructor
	Hospice volunteer
	Recreational therapist
	Massage therapist

team and advisors. This resulted in (1) a shared definition of presence; (2) a framework with several major themes supporting this definition; and (3) identification of cross-professional strategies for attaining presence. Data generated and analysed as part of this research are not publicly posted due to potential opportunity to

**Table 2** Characteristics of participants (n=40)

Characteristic	N	Percentage of sample (%)
Gender		
Male	22	55
Female	18	45
Race/ethnicity		
White/Caucasian	24	60
Asian and southeast Asian	9	23
Latino/a	3	8
Middle Eastern	2	5
Pacific Islander	1	3
African American	1	3
Age (years)		
20–29	4	10
30–39	13	33
40–49	10	25
50–59	13	33

### Box 1 Questions for interview protocol

1. What do you enjoy most about what you do?
2. Can you tell me a bit about instances in your professional work where you need to make personal connections with individuals (eg, patients, congregants, consumers, trainees, clients)?
3. What do you do to create these connections? Are there specific things that you say or non-verbal gestures or actions that you use?
4. Is there anything that you do to help you be more present (or fully emotionally available) in these moments?
5. Is there anything you do to build trust (with the people you work with)?
6. Is there anything you do to establish boundaries for the interaction? (eg, time, etc.)
7. Is there anything in your environment that helps or hinders you when you are trying to create these connections?
8. I am curious about how you know that you've made a connection with someone. Can you think of a specific recent interaction and walk me through how you knew you made a connection?
9. Have you had times when it was difficult to connect? What did you do?
10. Do you change your strategies for different types of people? How so?
11. Do you change your strategies in different situations (eg, in a crisis)?
12. Are there any resources that you have found useful in developing techniques to connect and be available and present with others? Are there any experts in your profession who you'd recommend we read about or contact?
13. Is there anything else that we should know about how you create these connections?
14. What does the term presence mean to you? What does connection mean to you? Listening, rapport, trust—Can you reflect on what these words mean to you?

identify participants. However, data are available from the corresponding author on reasonable request. Protocols are also available on request.

### Patient and public involvement

Limited public involvement in the design and analysis of this research was elicited via research-in-progress presentations to the Presence Centre at Stanford University School of Medicine. Patient input was not directly requested.

## RESULTS

Qualitative analyses yielded a definition for clinician presence as, *a purposeful practice of awareness, focus, and attention with the intent to understand and connect with individuals/patients*. Our framework focused on activities involved in creating presence: intentional connection, being aware of time and managing the physical environment (table 3).

### Presence requires purposeful intention to connect

Several interviewees noted that connection is created through ‘attention’, ‘focus,’ and ‘listening just to understand’. One physician described presence as ‘intense connected moment(s)’ during the clinical interview, where ‘(you are) trying to understand (a patient’s) level of suffering (and) the significance of their story’. An enforcement agent stated that connection is ‘the goal of presence’; a chaplain defined presence as a state of ‘(not being) alone to each other’. Presence was also described as the absence or opposite of distraction. A journalist reflected that not paying attention could indicate ‘this person is not really interested...in me’.

Our definition of presence as ‘purposeful’ practices intentionally includes both *deliberate* practices—practices that you intentionally choose to do—and also doing practices *for a purpose*, with the goal of achieving specific results. Deliberate practices and goals overlapped, informing our choice of the word ‘purposeful’, and included: making an agenda ‘so we’re clear’ (physician); making a connection (high school health educator); determining how truthful people are being (enforcement agent); identifying skills and resources people need to get tasks done (software company director); listening to understand, not to develop a response (hospice volunteer); trying to empower patients (physician); supporting the feeling of making a difference (physician); and engendering trust through participant empowerment (documentary filmmaker). We see in our data that presence is central to the goals of patient care, including connecting and listening, and also to the care of the humanity of the clinician, promoting resiliency for them through feeling that they make a difference.

Interviewees described removing distractions and being prepared as key strategies to achieving purposeful intention. Some mentioned removing both literal and figurative distractions. A restorative justice lawyer described a personal ritual of brushing off external or intruding

thoughts and feelings between encounters to be more present, and repeating: ‘Now. Here. This’. Several physicians described the value of arriving early to review charts and plan, in order to enter into visits feeling prepared.

### Presence requires conscious navigation of time

Presence was described as something temporal and tangible, happening during a specific time, and requiring protective boundaries. Time was referenced repeatedly, for example, ‘taking a minute to notice’ (health promoter). Echoing its root in the concept of being in the present, presence was defined as not thinking ahead but instead returning to the current moment. An enforcement agent also referenced presence as being aware ‘in real time’.

Strategies related to presence and time included prioritising brief quiet time for reflective ‘re-centering’ breaks that physicians and professionals mentioned needing between patients/clients. A physician also suggested ‘not filling every moment’ of the day with technological distractions to allow more time for presence. Some physicians bemoaned the lack of time for self-reflection: ‘I don’t go home saying, *That was a great day...* I go home saying, *I’ve got all this other work to do*’. By contrast, a teacher valued the ‘bit of time to debrief’ with colleagues as valuable because it helped them process and be ready for the next day.

Clinicians acknowledged that ‘time with the patient (is) the key...An offhand comment when you’re talking about shoulder pain could lead you down to more chest pain’. In addition to being able to use time to explore medical content, physicians reported needing more time ‘to keep track of the growing data set’ generated by the electronic health record (EHR).

### Presence requires awareness of the physical environment

Presence was described in terms of its physical qualities. This included concrete factors such as positioning and spacing (‘being physically there’), and also more abstract physical sensations: ‘you feel it when the temperature changes in the room’. All interviewees described the pull of competing priorities, with physicians particularly highlighting the challenge that administrative demands and the EHR pose for presence, particularly because some clinicians expressed that it is ‘rude for somebody to look at a screen and not look at the person in front of them’.

Interviewees used space as a metaphor. In addition to referring to the literal physical environment, the use of ‘space’ also referenced the emotional and relational environment. Discussion of space was both literal—‘the sound, the seats, the space, the rooms set up in a circle’, and metaphorical—‘presence allows the space for the unknown and clinicians aren’t comfortable with the unknown’. Participants (physician, recreational therapist, design researcher, and health promoter) often equated presence with space, as in ‘holding space’, or ‘letting enough space in’.

Strategies related to presence and space emphasised that, as with other physical spaces, presence requires

**Table 3** Comparative exemplar quotes from a national convenience sample of physicians and non-medical professionals about themes related to presence (n=40, interviews conducted in 2017–2018)

Theme	Physician Quotes	Non-Medical Professional Quotes
<i>Purposeful intention to connect</i>		
Intention to connect	You want to open (communication)... You want to have people feel freedom that they can talk to you about personal things (MD1)	I think that's the goal of presence... to obtain a connection, but you may or may not get it (EPA enforcement agent)
Attention	I think just really being there, and being already listening to them ...So, I don't look at the computer. I just really try to look at them (MD1)	I like 'attending' better than 'presence' because it suggests that there's a relationship (LCSW)
Focus	I guess it's just a complete focus on the patient at that time and at that moment, and really trying to give your undivided attention to that (MD3)	Staying focused on the moment, looking somebody in the eye (Journalist)
Listening	I think I've learnt to just sit and listen and be present for when patients share their story about what's going on with them, and what's of interest to them, and really just giving them the space to talk about that and overcoming the urge to interrupt or direct the conversation (MD8)	Listening and responding to them. ...one of the most difficult parts of interviewing somebody is truly listening... So, being present is truly listening (Journalist)
Focusing on the client/patient story	The interview often with me is... that really intense connected moment where I'm really trying to understand their level of suffering, what this means to them, the significance of their story and how that impacts their life (MD2)	Most of the times it's about hearing someone's story and about why they did something, and where it led them, and who they are now. And so those experiences change me often ...because I was present for (the story) (Documentary filmmaker)
Not being alone	...so (a patient) didn't feel like she was completely alone in that, I assessed that the best way to make her feel safe was for me to disclose my vulnerability as well (MD2)	We haven't been alone to each other, we haven't been alone to what's greater than ourselves (Chaplain)
Removing distractions	Well, so I kind of say that your baggage is packed. So, it isn't spilling into the office visit or the phone call or whatever it is (MD7)	It means kind of the opposite of distraction. It's kind of focus(ing) on your conversation and interaction with a person in real time and having a true sense of focus on it (EPA enforcement agent)
<i>Conscious navigation of time</i>		
Returning to the present	It is almost like a meditation where we're taught to focus on our breathing and focus, but naturally our mind wanders, and you want to check that email (MD3)	... the executive director of our organisation..., he always uses this mantra where he says, 'Now. Here. This', to stay present. And so, when I remember to do that, it has been helpful (Restorative justice lawyer)
Taking breaks	I take breaks, actually. I think that's been a big thing. I am no longer interested and I'm no longer capable, because of that, of this way of working where you're constantly doing something (MD5)	Yeah, get a good sleep, making sure that (I've) eaten, making sure there's breaks, and that I have stuff with me to keep my energy going, like (chocolate) and water and stuff, whatever I need that day (Documentary filmmaker)
Quiet/ silence/ slowing down	I'm not in as much of a rush to get to the right answer. I'm more comfortable with the silence, with the space, with the level of certainty that comes with primary care, and understanding that I don't have to have the answer right this instant (MD8)	I think silence is a big part of presence, and I think just taking a minute to notice, to get where the person is from, really how are you today (Psychology professor)
<i>Management of the physical environment</i>		
Occupying the same space as a client/ patient	I certainly pull the chair up close to talk to people trying to find that right distance, not too close, but certainly not across the room. Just trying to be in that space with the patient (MD1)	Presence is a felt sense that I have of ... being seated inside myself in my body and being present in the room, sitting in the room and aware of everything that's in the room (LCSW)
Setting boundaries	I'll be very persistent (about staying on topic). Like, 'Uh, no, we're not going there. We're staying here'. That's ...related to boundary setting ...trying to control things so that there can be connection, so that something can happen, so that there's time to actually engage... (MD5)	...Setting boundaries... (is) 'here's what I'm going to do and here's what you're going to do. Is that okay with you?' ... Asking permission (Recreational therapist)
Technology/ managing competing priorities	And so, maybe part of presence is also letting them know, 'okay, I'm looking at the ER visit, because you're telling me about that' (MD3)	So, you close the laptop and you get away from the table and you don't look at your notes and you connect (Psychology professor)



boundaries. Participants created presence by determining who would be in the room and setting boundaries for how much personal information to share. To combat the distancing effects of technology, physicians described putting away phones during clinic visits and avoiding email. In addition, some physicians discussed strategies that preserved connection with patients during technology use: ‘presence is also letting them know... (you’re) looking something up (in the health record)’.

Physicians also utilised up-front expectation setting and help from team members to support boundaries on time. Physicians would communicate from the start of the visit with patients about boundaries of time, for example, for the patient who arrived late: ‘(it’s) gonna be a short visit’. However, physicians were reluctant to interrupt patients on account of time, even if the visit was running over. In team-based practices, staff would also support boundaries around time by establishing visit length expectations during the rooming process, and knocking/entering the clinic room to communicate when a visit had gone too long.

## DISCUSSION

In this study of physicians and non-medical professionals whose jobs involve human connection, we found that presence is a universal concept that involves intentionality, focus, and attention to time and the physical environment. A growing body of work has explored presence in the context of healthcare system/intervention design,<sup>16–19</sup> and has focused on clinical conditions, actions, or training to make presence possible. To our knowledge, however, this is the first study to systematically generate a definition for presence, which may help guide research and interventions that leverage insights from within and outside the field of medicine.

### Presence vis-a-vis connection, empathy, and mindfulness

Presence rightly overlaps with other core areas of patient-clinician interactions, such as connection, empathy, and emotions (both those of the patient and the physician). Extensive work in the realm of relational communication can be leveraged to support presence and shed light on how clinician presence might be achieved, for instance by attending to patient stories, avoiding interruptions, using silence and reflective listening, setting agendas, and harnessing non-verbal communication skills such as eye contact and leaning in. In this vein, interventions building communication skills with emphasis on presence-like relational communication have been associated with reducing burnout.<sup>7</sup>

Furthermore, research in the interface between emotional awareness/empathy and presence could enrich both concepts. Empathy and emotional awareness exhibited by clinicians build trust,<sup>20</sup> but the documented ‘emotional labour’ of empathy in clinical care is substantial.<sup>21</sup> The support that physicians need, both in managing responses to patient emotions and regulating

their own emotional well-being, could be addressed through clinician presence. Presence may consist of a set of behaviours, skills, and rituals allowing clinicians to better care for patients in distress. It may also support physicians in allowing for structured rituals, such as a few deep breaths before entering into patient rooms, that are known to support regulation of emotional experience by changing neurological and physical responses in the body.<sup>22</sup>

Defining clinical presence gives medicine the conceptual language to examine unexplored elements of patient-clinician connection that not only enhance patient care but also enrich clinician experience of their role as healers. Today’s technology-saturated clinic environment is driving demand for interventions that foster human connection; an intervention focused on presence is a natural next step to address human disconnection in busy clinics.

Our interest in presence is motivated by the need to synthesise approaches from connection, communication, and partnership in the context of the clinic visit. We are also driven by the conviction that while fundamentals of communication, emotional awareness, or even perfected clinic flow are indeed steps towards achieving better patient outcomes, there is more to healing than any individual practice in these domains. Our framework for presence may facilitate continued conversation about the role of physicians as scientists, detectives, empaths, and healers.

### What could presence look like?

The features of presence lend themselves to specific practices that warrant further exploration, particularly in the areas of listening/silence, contextual awareness, and mindfulness. Presence involves learning to step back, pause, suspend expectations, and receive and connect with someone’s story. Physicians interrupt their patients early and often<sup>23</sup> — an emphasis on listening as a prerequisite for presence opens conceptual and curricular space for teaching not only how to communicate, but when to stay silent.

Presence also lies at the juncture of interactions within clinical spaces; respondents described that it hangs in the air, is felt as a physical quality, or emanates between two people whose goals are aligned. Because presence is influenced by contextual factors for many professionals, teaching physicians to consider their physical environment could help preserve and channel connections. Specific approaches from the literature include sharing the screen so that the EHR is fully integrated into the visit, providing panel management support or scribe services, leveraging technical solutions to help support clinical decision-making, and maximising the efficiency of the EHR.<sup>24 25</sup>

Looking ahead as the US population ages, best practices for communication and connection will need to be expanded beyond the traditional patient-clinician dyad. Exploring presence may help us address the integration

of caregivers, friends, and family into clinic visits and relationships with clinicians. Finally, mindfulness may be an important component of presence in training and clinical interactions, where even very minimal levels of effort (<5 min daily) may demonstrate benefit.

### Limitations

Several limitations warrant discussion. First, study findings were derived from a small sample of physicians and non-medical professionals. Nevertheless, we found that we reached thematic saturation and coherence with 40 participants. Second, the study was limited to the perspective of primary care clinicians and other professionals. Future efforts should evaluate the impact of presence on patients, particularly since research has documented that physicians often overestimate their ability to communicate effectively.<sup>26</sup> In addition, the study's focus on individual practices to achieve presence has the potential to obscure the critical need for system-based interventions that address time pressure and technology intrusions. To be clear, while our findings suggest that presence is a central and important part of high-quality care that can support wellness for both patients and clinicians, the full onus of system change should not be placed on physicians. Misplacing the burden of responsibility solely on individual physicians without addressing system-level issues could in fact have unintended consequences of increasing expectations without adding support, which has been linked to increased burnout.<sup>27</sup>

### CONCLUSION

In conclusion, human connection is central to clinical care; while challenging to cultivate, this connection offers some of the greatest rewards for practicing physicians. Insights from physicians and non-medical professionals suggest that clinician presence may be achieved through purposeful intention to connect, conscious navigation of time, and proactive management of technology and the environment to focus attention on the patient. Adopting intentional practices to support presence may make physicians more receptive to patient stories and facilitate meaningful exchanges that are critical to accurate diagnosis, clinical decision-making, and therapeutic interactions for both patients and physicians.

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**Contributors** CBJ was involved in data collection and analysis. She also was the primary author of the manuscript. RS was involved in data collection and analysis. She also was a major contributor to writing the manuscript. AM was involved in data collection and analysis. She also was a primary contributor to the manuscript. MCH was involved in data collection and analysis. She also contributed significant edits to the manuscript. AT was involved in data collection and analysis. He also contributed significant edits to the manuscript. JGS was involved in research design, data collection, and also contributed significant edits to the manuscript. DLZ was involved in data collection and analysis. She also contributed significant edits to the manuscript. NS was involved in data collection and analysis. She also contributed significant edits to the manuscript. STI was involved in research design and also contributed significant edits to the manuscript. AV was involved in research design and also contributed significant edits to the manuscript. DMZ was involved in research design and data collection, and also contributed significant edits to the manuscript. All authors read and approved the final manuscript.

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