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RESEARCH ARTICLE



Clinical supervision under pressure: a qualitative study amongst health care professionals working on the ICU during COVID-19

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ABSTRACT

Purpose: The unprecedented influx of patients in 2020 with COVID-19 to intensive care units (ICU) required redeployment of healthcare professionals without adequate previous ICU-training. In these extraordinary circumstances, pivotal elements of effective clinical supervision emerged. This study sets out to explore the nature, aspects and key features of supervision under highly demanding circumstances among certified and redeployed healthcare professionals on COVID-19 ICUs.

Materials and methods: A prospective qualitative, single center, semi-structured interview study among healthcare professionals at COVID-19 ICUs at University Medical Center Utrecht, the Netherlands between July and December 2020. Interview data were analyzed using an inductive coding style.

Results: A total of 13 certified and 13 redeployed healthcare professionals, including physicians, nurses, and operation room technicians participated. Seven themes were identified as essential for both certified (supervisors) and redeployed (trainees) personnel: an open attitude, observing boundaries, gauging coworkers' capacities, being available, providing feedback, continuity in care and teams, and combining supervision with workload.

Conclusions: This study provides seven recommendations for both supervisors and trainees to help optimize clinical supervision. They align with the known five factors determining entrustment and supervision (trainee, supervisor, task, context, and relationship). To ensure good clinical supervision, be it either during normal circumstances or under pressure, efforts should primarily focus on factors that are within a supervisor or trainee's span of control.

MeSH: Clinical supervision, interprofessional, COVID-19, Intensive Care

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Introduction


Over the past years the coronavirus disease 2019 (COVID-19) pandemic has repeatedly and severely disrupted health care. At multiple peak moments, hospitals worldwide have struggled to deal with the overwhelming surge of critically ill COVID-19 patients beyond the capacity of intensive care units (ICUs). Major bottlenecks were not only a shortage of beds and materials but also a lack of certified personnel. To help meet demands during this 'war in time of peace', numerous non-ICU health-care workers such as physicians, nurses, and trainees from other specialties and from non-ICU wards were being called upon to help provide intensive care. Often without adequate training, these redeployed health care workers were suddenly being entrusted with

tasks outside their normal scope of practice, sometimes even at hastily converted locations not built for intensive care and with equipment not primarily intended for ICU-use.

For this new constellation of healthcare workers with a different background for what they are asked to do, supervision is of utmost importance. Clinical supervision can be defined as 'the provision of guidance and support in learning and working effectively in health care by observing and directing the execution of tasks or activities and making certain that everything is done correctly and safely, from a position of being in charge' [1]. Ten Cate combined two previously described definitions of clinical supervision by Milne [2] and Kilminster et al. [3], respectively, to ensure the more formal or hierarchical role description of supervision. One of the major benefits of this proposed definition of

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clinical supervision is that it is applicable in the inter-professional setting. Providing supervision or being supervised in clinical practice forms an integrated part of training and daily practice for healthcare professionals and most have experience and/or were trained in providing and/or receiving supervision. Interestingly, there appear to be different interpretations of clinical supervision. In Australia, New Zealand, and the United Kingdom clinical supervision refers to a reflective practice on the part of a novice or new nurse (the trainee) and the expert nurse (the supervisor), a mandatory and obligatory process both in the execution and development of the clinical supervisory relationship, while in the United States clinical supervision for nurses has been defined as the relationship between faculty or preceptor and student in a clinical nursing practice setting [4]. The latter resembles the definitions in health professionals' education and is applicable in the inter-professional clinical setting of the intensive care as described.

Despite its vital role in clinical education and its association with not only effectiveness of care [5] but also patient safety [6], clinical supervision has been qualified as 'probably the least investigated, discussed and developed aspect of clinical teaching' [3]. This certainly holds true for clinical supervision during the peak of the COVID-19 pandemic. In these extraordinary and stressful circumstances, a high level of autonomy of redeployed personnel was inevitable, leading to unexpected supervisory roles that many certified ICU healthcare professionals were ill-prepared to fulfil. This study set out to explore the nature and key features of supervision among certified (supervisors) and redeployed (trainees) health care professionals on COVID-19 ICUs.

Materials and methods

Setting

This was a qualitative, single-center, prospective interview study among healthcare workers at the COVID-19 ICUs at University Medical Center Utrecht, the Netherlands, during the first peak of COVID-19 pandemic in the spring of 2020. As we described elsewhere [7], the normal ICU 24 bed capacity was expanded to 80 (3 ICUs) superseding other hospital functionalities. The ICUs were run by a limited number of certified IC personnel, supplemented with physicians and nurses recruited from neighbouring health professions (including registered nurses, operation room technicians, anaesthesia technicians, including military nurses and physicians from a neighbouring military hospital), and volunteers with a different (and some even without any) background in health care. This resulted in an IC-certified to redeployed physician ratio of 1:1.4, an IC-certified to redeployed nurse

ratio of 1:1.5, and an IC-certified nurse-to-patient ratio of (rounded) 1:3 (normally 1:1).

Population

Using a theoretical sampling [8], ICU healthcare workers, both certified and redeployed, were asked to voluntarily participate in this interview study. We aimed to include a physician-to-nurse ratio that reflected daily working conditions during the height of the COVID-19 pandemic. The inclusion of interviewees was guided by data saturation, referring to the point at which new interviews no longer produced new themes [9].

Instrument

The semi-structured interview protocol, developed according to extant guidelines [10], included demographic questions (health profession, normal work location, years of experience and duration of deployment) as well as open-ended questions on supervision given and experienced, such as: What was the level of supervision you gave or received? Was the supervision adequate? Why (not)? Did you feel equipped to give supervision? What is good supervision to you? How can we train providing/receiving supervision and prepare for a next crisis? (Appendix S1).

Administration

Participants were interviewed once. Data was collected using a voice recorder or, in the case of remote interviewing, by recording option, and hereafter transcribed and coded.

Ethical considerations and data-management plan

Ethical approval for this study was waved by the Medical Ethics Review Board of the University Medical Center Utrecht (No. 20-453/C). Data collected was anonymized and saved on storage devices in a secure location and will be destroyed once they are no longer in use.

Data analysis

Data analysis was performed at the University Medical Center Utrecht, the Netherlands. Based on the six-step process of thematic analysis as described by Kiger and Varpio [11], interview data were analyzed using an inductive coding style, often referred to as a grounded analysis [11]. The first five interviews were independently coded by two researchers (HvH and MPH). Hereafter, a team meeting (MH,

HvH, and MvD) was held to discuss pilot coding of five interviews and to fine-tune the coding procedure, after which data coding and extraction was performed by HvH and MH. Inclusion was stopped when interviews no longer produced new themes. Both authors independently read and re-read all interviews and coded themes within the interviews with the third author (MvD) serving as referee for (parts of) interviews when consensus on the themes used was not immediately reached. MAXQDA 2020 software was used to support thematic analysis.

Results

A total of 26 healthcare workers participated in the study (Table 1). Participants were interviewed between July and December 2020, and interview duration ranged from 18 to 61 min (see appendix S2 for translated raw interview data).

Table 1. Characteristics of participants.

	Total n	Redeployed* n	Number of years' experience in current employment for all
Nurses	22	10	24 (range 1–45) yr
Physicians	4	3	4.6 (range 1.5–7) yr

*Redeployed nurses included registered nurses, operation room technicians, anesthesia technicians.

Characteristics of supervision

Thematic analysis of interviews produced seven themes concerning supervision: attitude, boundaries, training and education, availability, feedback, continuity and team composition, and workload. Each theme can be regarded as a characteristic of supervision, with health provider experiences that ranged from more positive to more negative ones, such as sufficiency versus a lack of it. In Table 2 we summarized these characteristics with contrasting quotations.

Open attitude

Mutual respect, honesty, and transparency were mentioned as key elements of supervision. A redeployed nurse reported being welcomed by a supervising intensivist showing an open and inclusive attitude *'He said: I am Doctor X, who are you and what is your impression of this patient?'* (I-2, redeployed nurse). Interviewees indicated that often participants took each other seriously, were able to empathize with each other's situations and feelings, were accepting of differences in knowledge and skills without being judgmental and both sought and valued each other's suggestions; hence supervision was experienced as not only positive but also effective. The extraordinary circumstances and the feeling of 'being in this together' helped participants to go above and beyond regular work. Some, however, did wonder whether this positive attitude would have

Table 2. Themes, salient findings, and contrasting participant quotes.

Themes	Salient findings	Contrasting quotes
(1) Open attitude	Respect, honesty and transparency are mentioned as key elements of successful supervision	<i>'Easily accessible, no question is too much, no question is too stupid or redundant.'</i> (I-14) <i>'I was only seen as a helping hand and nothing more, asking questions was not appreciated'</i> (I-12)
(2) Observing own boundaries	Being aware of the (limits) of one's competence is mandatory for effective supervision and patient safety.	<i>'I'm not a certified ICU nurse, so please talk me through it'</i> (I-1) <i>'We were part of the team proning patients, you know, we walked in and suddenly one of the patients' oxygen levels dropped and the alarm went off. When we asked the ICU nurse nearby: we see that this happens, can you help us? And she said: That is not my patient.'</i> (I-13)
(3) Gauging coworkers' capacities	Redeployed personnel lacking relevant knowledge, skills and experience were more of a burden than a help	<i>'Anesthesia technicians are very good, really, I enjoyed working together, despite our different job descriptions'</i> (I-9) <i>'... supervising those people [volunteers without ICU or even medical expertise] only took up time and energy instead of being really helpful.'</i> (I- 1)
(4) Being available	Availability of supervision is reported as a critical element. Face-to-face is preferred over telephone consultation	<i>'... , you can always call me. I'd rather have you calling me once too many times.'</i> (I-9) <i>'Redeployed physicians did not always know who their supervisor was or how to reach them'</i> (I-8)
(5) Providing feedback	Feedback on performance was highly valued. Unfortunately, there was not always time nor place to give and receive feedback	<i>'Every shift was evaluated. That created a safe environment'</i> (I-9) <i>'Well, what lacked in my opinion was a moment to sit together and reflect what we encountered with patients and how to improve this.'</i> (I-10)
(6) Continuity in care and teams	A consistent schedule and team composition was preferred to create a more constant and efficient workforce	<i>'Oh, today I'm scheduled at ICU X, I've not been there yet, but Lisette has, so we decided to swap shifts to ensure continuity'</i> (I-19) <i>'Redeployed personnel had different qualifications, different skills, so every time it was a discovery to find out what they were capable of.'</i> (I-6)
(7) Combining supervision with workload	The workload was very high, balancing patient care and providing supervision was challenging	<i>'The supervision I have given, was minimal, merely because of the high workload ... It was, well, trusting the redeployed workers and hope that they could complete their task and ask questions if needed.'</i> (I-6) <i>'...it was just too busy, not enough certified personnel, too many patients'</i> (I-7)

endured if the surge of COVID-19 patients would have had lasted much longer. *'There was good spirit which was very important (...) I do think however that if this would have lasted for more than four months, things would have become more complicated.'* (I-15, a redeployed former ICU nurse).

Observing own boundaries

Both supervisors (certified personnel) and trainees (redeployed personnel) reported how important it was that all healthcare professionals working on a COVID-19 ICU were explicit about their capabilities and their limitations. This was especially paramount in situations where healthcare professionals worked together for the first time, which happened frequently during the peak of the COVID-19 pandemic. *'They made their limitations very clear. One of them said: Well, normally I'm stationed in a tent out in the open field, so I don't know how to do this.'* (I-9, a certified ICU nurse, supervising a redeployed military health professional)

Gauging coworkers' capacities

In contrast, many ICU certified personnel stated that redeployed personnel, nurses, and physicians alike, who lacked specific knowledge, skills, and/or experience were more of a burden than a help given the amount of time and energy needed to supervise them. *'There were way too many incapable people, they were of no help at all.'* (I-7 a certified ICU nurse, on some of the redeployed personnel). Notably, certified ICU-nurses in particular found it challenging to entrust certain (part) tasks to redeployed and, in their opinion, 'incompetent-but-unaware-of-it' co-workers, whose capabilities were not immediately clear to them. Seemingly simple tasks could have serious negative implications if a redeployed co-worker lacked the knowledge and skills to recognize and act upon findings. For example, some would fail to recognize a drop in blood pressure when changing continuous vaso-active infusion pumps. Other certified ICU nurses reported supervising redeployed physicians who did not realize they had lost specific ICU knowledge.

Being available

Doctors and nurses alike found direct availability of a supervisor essential. *'Sometimes I felt very lonely when I had to wait for help when I did not know how to carry on'* (I-12, a redeployed nurse). Physical availability was preferred over availability by telephone; having to call someone for supervision created a barrier. However, supervising in full personal protection equipment (PPE) unintentionally delayed physical availability and thus adequate patient care on occasion as donning and doffing PPE, especially in

emergency situations, took up valuable time. The high workload of supervisors, caused by competing tasks, impacted their availability negatively, especially of nurse-supervisors.

Providing feedback

Feedback on performance, for both trainees and supervisors, was highly valued as an essential element of supervision. *'I think I was able to teach people a lot; I evaluated my co-workers each shift, I did the "time-outs" with the anesthesiology, ... and always got the response that they enjoyed working with me, learned a lot, and that they felt safe.'* (I-14, certified ICU nurse). Although a number of participants praised the evaluations at the end of a shift, unfortunately there was not always time or place to give and receive feedback on individual and/or team performance. More feedback was often requested; participants mentioned a lack of opportunities to discuss the barriers they encountered during daily patient care.

Continuity in care and teams

Scheduling all personnel in the three ICU wards during the first COVID-19 surge was challenging, and continuity of care and team compositions were not made a priority in the early phases, according to many participants. *'Continuity is important, because there were people like Yvonne (...) who was scheduled to work first at unit X, then at unit Y and finally at unit Z. Three nights in a row (...) That should be organized better.'* (I-3, a redeployed nurse).

However, many interviewees stated that repeatedly familiarizing themselves with new patients, surroundings, and co-workers devoured energy and chipped away valuable time for supervision, affecting patient care quality and safety. Some redeployed nurses took it upon themselves to swap shifts among themselves just to uphold continuity of care, team composition, and subsequent quality of care.

Combining supervision with workload

The high workload for both certified and redeployed nurses and doctors led to less supervision than desired and usual standards of care had to be compromised to get the job done. Especially ICU certified nurses experienced the high workload as agonizing. They were most aware of compromises in care and had to combine regular patient care with the (often) foreign task of simultaneously providing supervision, not only to ICU-nurses in training but also to redeployed personnel. *'...because we could never give five patients the best care. Especially when they are as ill as these patients were, that is just impossible. But I think together we did the best job we could do'*(I-21 an ICU certified nurse).

Discussion

To accommodate the unprecedented influx of patients with COVID-19 to intensive care units (ICU) during the first wave of the pandemic, redeployment of healthcare professionals without adequate training to these units was required. In these extraordinary circumstances, essential elements for effective clinical supervision emerged. Analysis of 26 interviews with certified and redeployed health-care workers, performed shortly after this first COVID-19 wave, showed seven themes that characterized clinical supervision under pressure: an open attitude, observing boundaries, dealing with gauging coworkers' capacities, being available, providing feedback, continuity in care and teams, combining supervision with workload.

In our attempt to ground the identified themes we found an analogy with the factors involved in the entrustment with clinical tasks as described by Hauer et al. [12]. Giving clinical supervision requires supervisors to make decisions about how much independence to allow for their trainees in patient care tasks. As described by Hauer and colleagues, clinical supervision revolves around decisions of entrustment with patient care tasks and is determined by five groups of factors. In the challenging and dynamic context of the COVID-19 ICUs this included entrusting redeployed health care professionals, with the critical responsibility to care for a patient. The factors influencing a supervisor's (ICU certified professional) trust in a trainee (a redeployed health care professional) appear to align well with the factors described by Hauer et al.: i) the supervisor; ii) the trainee; iii) the supervisor – trainee relationship; iv) the task; and v) the context [12]. The seven themes found in our study can be categorized within these five factors that support the granting of entrustment, underscoring the importance of these factors (Table 3). First, expertise, experience, attitude and habits, are described as key features of a supervisor [12]. Several themes distilled from our study (Table 3), can be attributed to a supervisor and their provided supervision underlining the importance of these features, not only in 'regular' clinical supervision, but even more so in the extraordinary setting of the first COVID-19 wave. Interestingly, we found that adapted supervision arrangements occurred with experienced ICU nurses who were occasionally reluctant to supervise

redeployed physicians as the latter lacked the required knowledge for optimal patient care. Secondly, key features for trainees (redeployed personnel) included competence, attitude and habits, and self-confidence [12]. Participants' competence is reflected in the theme 'Gauging coworkers' capacities' whereas self-confidence is incorporated in the 'Observing own boundaries' theme. Being aware of the limits of one's competence was found to be pivotal to give and experience effective supervision in our study. Overestimating one's own competence and self-confidence by a redeployed health care professional namely, appeared to result in unwittingly refraining from asking for supervision. The resulting lack of supervision posed a risk to patient safety in the complex and stressful environment of a COVID-19 ICU. Furthermore, for a trusting relationship to develop between the supervisor and trainee interpersonal dynamic, concordance or a shared understanding of expectations and the amount of contact are described as essential [12]. With constantly changing settings and personnel compositions however, as reflected in the theme 'Continuity and team composition', we found that there was often insufficient time to build interpersonal relations during the first COVID-19 wave, complicating supervision. In addition, workplace affordances, work environment, system issues, workload and workplace culture are known to influence entrustment decisions for clinical tasks [12]. During the first COVID-19 wave however, a high workload was experienced in frequently changing environments with very limited opportunity to optimize the conditions for supervision. The organization focused primarily on short term solutions, i.e., providing critical care and less to long-term effects such as workplace affordances and workplace culture as described in the theme 'workload'. Finally, options for task selection based on sequencing, complexity and risk to facilitate trainees' participation and entrustment with them were severely limited [12]. The unfamiliarity of supervisors with the level of training and education of redeployed personnel, the high workload, the continuously changing team composition however, negatively impacted the willingness and/or possibility to make these choices during the first wave of COVID-19. The alignment of the themes distilled in our study with Hauer's five factors that underpin the granting of entrustment supports our

Table 3. Essential factors for supervision in health-care professional's education and the seven identified themes from this study.

Hauer et al. Factors influencing a supervisor's trust in a trainee		Themes distilled from this study
I	Features of the supervisor	Open attitude, gauging coworkers' capacities, being available, providing feedback
II	Characteristics of trainee	Open attitude, observing own boundaries, gauging coworkers' capacities, providing feedback
III	Trainee – supervisor relationship	Continuity in care and teams, combining supervision with workload
IV	Practice context	Continuity in care and teams, combining supervision with workload
V	Nature of the task	Gauging coworkers' capacities, continuity in care and teams, combining supervision with workload

hypothesis that these factors are universally applicable to clinical supervision, including on our ICUs during the first COVID-19 wave.

A review, performed before the start of the COVID-19 pandemic by Rothwell et al., identified several enablers of and barriers to effective clinical supervision [13]. They used a roughly similar definition of clinical supervision as we did. Strikingly, most enablers including establishing a supervisory relationship based on trust, regular supervision with timely feedback and training for supervisors, however, were absent or impossible to manage in our study set during the first wave of the COVID-19 pandemic. On top of that, many of the barriers described, especially a lack of time, space, and trust, were present. This underscores that not all of the factors influencing supervision are in a supervisor's or trainee's span of control, highlighting the need to focus on and optimize those that are. The impact of COVID-19 on clinical supervision practices of health-care workers and students in health-care settings has been described by Martin et al. [14] who identified four themes that may disrupt effective clinical supervision: the nature and extent of the disruptions; unmet need for psychological support; the support supervisors themselves need; and using tele-supervision. ICUs were not included in this review, which might explain the different or additional themes found to influence supervision in our study.

Giving and receiving clinical supervision has quite a lot in common with entrusting learners with professional activities. To optimize effective clinical supervision, ideally all five aspects as described by Hauer [12] should be addressed accordingly by those involved. During the first COVID-19 wave however, not all of these aspects could be optimized, due to the sheer number of patients and the overwhelming shortage of beds, materials, and certified health-care personnel. Furthermore, in these challenging times, optimizing clinical supervision was understandably not made a priority, whereas providing the best possible medical care within the available resources was. The factors 'context' and 'task' were a given and determined by the unprecedented increase of patients in need of intensive care. The 'task' was similar for all ICU personnel, whether or not ICU certified, namely treating patients with COVID-19. The newly formed constellation of ICU personnel made it challenging for both trainees and supervisors to adjust to their new role. Many people worked together for the first time and often there were no relationships between trainees and supervisors to build upon. The high workload further hindered building this relationship. Our study shows that in these extreme circumstances, the five factors

identified by Hauer et al. as determining entrustment with professional activities are applicable to clinical supervision both for nurses and for physicians. The unprecedented circumstances, however, have also shown that not all of these aspects, e.g., the high workload and nature of the task, are within a supervisor's or trainee's span of control. To make the most of clinical supervision, we recommend to incorporate an open attitude, observing boundaries, gauging coworkers' capacities, being available, providing feedback, continuity in care and teams, and combining supervision with workload. Ideally, these recommendations are part of (interprofessional) team training for either existing teams or ad hoc teams to prepare them for better supervision in both normal and extraordinary circumstances.

These results may guide improvement measures to supervision conditions in addition to gaining further insights on the reported essential topics of supervision. The COVID-19 pandemic may represent an enduring transformation in medicine and provide us with a unique opportunity to learn from the lived experience and prioritize a forward-thinking and scholarly approach as practical solutions are being implemented. It provided a magnifying lens to study the features of adequate supervision. This study allowed for reflection and evaluation of how supervision of redeployed healthcare workers may have influenced patient care and potentially translated to trainees and professionals in regular healthcare circumstances. To help optimize clinical supervision in any situation, instead of only the extreme setting of our study, we propose making explicit which factors are influenceable and to focus on those.

Several limitations of our study, however, must be observed. First, the interviews of this study were performed in 2020 shortly after the first wave in a single center in the Netherlands, a Northern European country, which could make our findings less generalizable to other settings. Second, virtual and/or tele-supervision was not included. Third, one researcher (HvH) conducted all participant interviews. However, her position outside all the organizations represented in the study enabled participants to feel unthreatened in the conversation, thus supporting a frank and open dialogue. Finally, as the interviews were held up to a year after the experience, there might have been a recall bias among some interviewees, leaving them with only the most salient memories. An advantage, however, might have been that looking back on a process after a while allows for reflection and critical thinking about what was of utmost importance and what was not. Strengths include the ratio of participating nurses and physicians representing the real-life situation in the

intensive care setting as described. Furthermore, the themes drawn from the interviews were in line with much of existent literature.

Conclusion

The COVID-19 pandemic has put the health care system in a proverbial pressure cooker and allowed the important features of clinical supervision to emerge. Seven recommendations important for clinical supervision were identified in this study: an open attitude, observing boundaries, gauging coworkers' capacities, being available, providing feedback, continuity in care and teams, and combining supervision with workload. They align with the extant literature on entrustment decision-making and clinical supervision, building on 1) the characteristics of the trainee; 2) nature of the task; 3) the practice context; 4) features of the supervisor; and 5) the relationship between trainee and supervisor, and are applicable for all health care professionals. Good clinical supervision should take these factors into consideration, under normal circumstances and under abnormal circumstances, when the nature of the task and practice context are less well controlled. Our study supports that striving for good clinical supervision should focus on the elements within one's reach, such as characteristics of the trainee, features of the supervisor, and the relationship between trainee and supervisor.

Practice points

Essentials for clinical supervision – Lessons learned from the first wave of the COVID-19 pandemic combined with the literature:-

- (1) This study provides seven recommendations for both supervisors and trainees to help optimize clinical supervision in any situation: an open attitude, observing own boundaries, gauging coworkers' capacities, being (physically) available, providing feedback, providing continuity in care and teams, and combining supervision with workload.
- (2) These seven recommendations align with the five factors essential for clinical supervision and entrustment decision-making: characteristics of the supervisor, characteristics of the trainee, the relationship trainee-supervisor, the nature of the task, and the practice context.
- (3) Striving for good clinical supervision, be it during normal circumstances or under pressure, should focus on those of the five factors that are within a supervisor's or trainee's span of control.

Abbreviations

COVID-19 The coronavirus disease 2019
ICU Intensive Care Unit

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Data availability statement

The interviews that support the findings of this study are accessible via Appendix S2.

Author contributions

MPH is the guarantor of the content of the manuscript, including the data and analysis. MPH and OtC conceived the study and designed the questionnaire, MvD and MH and collaboratively wrote the first and final versions of the manuscript. HH conducted and analyzed all interviews. MPH and MvD organized the interview administration and collected and analyzed data and together with HH, RH, and OtC critically reviewed multiple versions of the manuscript for important critical contributions. All authors reviewed multiple versions of the manuscript and approved the final version.

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