

## ORIGINAL ARTICLE

Volume 16 Issue 1 2024

DOI: 10.21315/eimj2024.16.1.3

### ARTICLE INFO

Received: 02-11-2022

Accepted: 10-06-2023

Online: 29-03-2024

# How Do Health Worker Qualities Affect Collaborative Skills? A Qualitative Study in Rural Indonesia Primary Health Services

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**To cite this article:** Putri NK, Ridlo IA. How do health worker qualities affect collaborative skills? a qualitative study in rural Indonesia primary health services. *Education in Medicine Journal*. 2024;16(1):23–46. <https://doi.org/10.21315/eimj2024.16.1.3>

**To link to this article:** <https://doi.org/10.21315/eimj2024.16.1.3>

## ABSTRACT

Health problems are complicated, even more so in remote areas. Collaboration has emerged as a solution to this complex problem. Some specific health worker qualities have been identified as related to the success of the collaboration, but the transformation of these qualities into collaborative behaviour remains unclear. An epistemological model of collaborative skills development was built and it was confirmed by the experiences of health workers. A research model based on interpretivism epistemology was also developed. The model was then generated using a qualitative methodology with a coding framework using deductive and inductive approaches based on the literature review and the interviews. Ten previously assigned health workers were interviewed to list their personal qualities and functions to overcome collaboration problems. The specific personal qualities of health workers determine each type of collaboration. The personality of health workers does not affect their collaborative skills with the community but is directly related to interprofessional collaboration skills.

**Keywords:** *Life value, Interpersonal communication, Personality, Collaboration*

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## INTRODUCTION

Health workers' maldistribution often becomes problematic in developing and under-developing countries (1), including Indonesia. Two social movements, *Pencerah Nusantara* and *Nusantara Sehat*, have sought to diminish the maldistribution of health workers in Indonesia. *Pencerah Nusantara* (brightener of the archipelago) is initiated and run by one of the influential non-governmental organisations (NGOs) in Indonesia, the Centre for Indonesia's Strategic Development Initiatives (CISDI) (2). *Pencerah Nusantara*, which began in 2012, revitalised primary health services by sending young professionals in the health and non-health fields to promote health and to work closely with various intersectoral stakeholders. In 2016, the Indonesian Ministry of Health issued a similar programme through *Nusantara Sehat* (healthy archipelago).

Both social movements provide health workers with short-term contracts for up to two years to strengthen primary healthcare in remote areas with a lack of healthcare workers in Indonesia. These movements recruit early-career health workers organised into several interprofessional teams. These team-based health workers comprise different health professions, including general practitioners, nurses, midwives, nutritionists and public health professionals. They should work hand-in-hand with the local health workers and the community in the assignment area. Interprofessional and community collaboration is often challenging for teams (3–5). The roles of professionals are reportedly unclear between teams and poorly understood by work partners (3). Professionals' divergent views, identified as protecting professional territory, have also been reportedly commonly and resulted in collaboration gaps within the team (4, 5). Hence, there is a need to learn more about how to function the collaborative skills within a team and community. It will be possible to ensure the effectiveness of collaborative skills in these social movements' management if such knowledge is accrued.

Nevertheless, published literature on collaborative skills in the setting of primary health services is sparse. Most studies examined interprofessional collaboration in the hospital service setting, which potentially has different methods of team coordination (6, 7). Moreover, studies on collaborative skills were limited to only team collaboration. An individual-level analysis of leadership is needed to build a broad concept of collaborative skills in the primary healthcare setting (8). However, to the authors' knowledge, no studies have explored specific personal qualities of health workers that determine the collaborative skills in interprofessional and community collaboration in a primary health service setting.

Collaboration and teamwork share common features, such as the need for clear roles and goals, shared accountability and interdependence among team members. Nonetheless, healthcare collaboration differs from teamwork in that it does not require a shared identity or the integration of individual members. In healthcare collaboration, various activities and knowledge are integrated based on the partners' shared authority and responsibility (9). The growing interest in interprofessional practice issues has resulted in the revised typology of collaboration. The revised typology divides interprofessional collaboration into consultative and collaborative partnerships (10). Consultancy functions from a collaborative team are dominated primarily by consultative collaboration with other health professionals, patients or management groups/individuals. On the other hand, health workers collaborate with only one different profession in a collaborative partnership.

Collaboration in public health is often analysed based on the context of interprofessional or interorganisational (11–13). The complexity of the public health problem leads to various organisations dealing with its problem solving. Interorganisational collaboration is needed in this context. The interorganisational collaboration is not merely in government-based organisations but in voluntary organisations. The differences in the formal structure and organisational cultures are related to the distinct roles and tasks of the professionals involved. Under this condition, interorganisational collaboration cannot be separated from interprofessional collaboration (13). In this study, community collaboration was used as an interchangeable term with interorganisational collaboration. The formation of interorganisational collaboration in public health requires community participation, which facilitates the integration of jointly shared goals and resources (14). Moreover, the observed teams of *Pencerah Nusantara* and *Nusantara Sehat* in this case study are operating in rural areas where the community becomes the first capital.

A research model based on interpretivism epistemology is developed in this study. Previous studies that recorded the variation of personal qualities in collaborative skills were identified. The research model considers the contextual factors of collaboration in Indonesia. The research model was then generated using the qualitative method. Findings derived from individual in-depth interviews were used to compile an inventory of personal qualities considered within each collaboration type. Based on this explanation, the research question was, what personal qualities exhibited by health workers influence their collaborative skills in interprofessional and community collaboration?

## METHODS

### Qualitative Approach and Research Paradigm

Interpretive epistemology was used to build the research model. Numerous types of literature about collaboration in healthcare were read and then compared with the contextualised environment of Indonesia. Based on the interpretation made, the authors argue that studies on collaborative leadership skills in primary health services are limited for two reasons.

1. First, the dynamic composition of the primary healthcare team often makes it difficult to standardise the team maturity in collaborating. *Pencerah Nusantara* and *Nusantara Sehat* should be considered in the analysis since the healthcare teams are newly formed, and there is no chance of member addition or subtraction in the middle of the teamwork. This provides the opportunity to minimise bias due to dynamic changes in team composition and immature teamwork.
2. Second, the complexity of public health problems affects various personal qualities of health workers, making it difficult to be listed. Different situations may require different combinations of personal qualities, and the specific needs of each situation may change over time. Given the diverse and evolving nature of public health problems, a comprehensive list of personal qualities is needed for success. It is essential to use a qualitative methodology when inventorying personal qualities.

The research model is shown in Figure 1. The model represents collaborative logic consisting of input, process, and output. The starting point of this collaborative process relies on the four primary characteristics of health workers: physical, psychological, social, and mental. In the collaborative skills development approach, this study emphasised analysing the personality and life values of health workers. Personality is a significant psychological characteristic that reflects an individual's behaviours, cognitions, and emotional patterns. Additionally, the life values of each health worker could influence their decision-making and behaviour daily. By considering the interaction between personal qualities and their surrounding social environment, the aim was to facilitate the transformation of individuals, resulting in the development of collaborative skills. This interaction was captured using interview questions exploring the health workers' experience. Collaborative skills are the knowledge, social competence, and the ability to collaborate with other professions and the community. The output of collaborative skills development is the behaviour of health workers in performing collaboration. Since primary health workers work as a team promoting community health, the collaborative skills were specified into interpersonal and community collaborative skills. Contextual factors, such as training, development, and team forming, were used as internal contextual factors and community culture as external contextual factors in the research model to accommodate Indonesian settings as the background of this study.

Based on the research model, core questions for the interviews were designed. The questions were designed using the experience approach to ensure that the participants told compelling stories to describe the situation, initial events, problems they experienced, and the action they took to solve those problems.

### **Researcher Characteristics, Reflexivity and Trustworthiness**

To ensure the accuracy of the interpretations and analysis, steps were taken to be reflexive about assumptions and biases. In particular, the member-checking method through a dialogical and recursive process among researchers and participants, as recommended by experts in the field, was used (15). Moreover, the setting familiarity (two academics from Indonesia had previously collaborated with former health workers of *Pencerah Nusantara* in designing a regional public health programme) helped validate the responses and findings (16).

### **Context**

*Pencerah Nusantara* and *Nusantara Sehat* seek to strengthen primary health services by placing health workers in problematic and remote areas. This social movement offers a short-term contract for health workers to be placed in the assigned area. *Pencerah Nusantara* was initiated and managed by an NGO that contracts health workers for a year. *Nusantara Sehat*, led by the Ministry of Health, places their health workers on two-year assignments. The recruitment method for both social movements targeted young health workers with unique backgrounds in their academic and organisational skills. They were arranged into an interprofessional team of general practitioners, dentists, nurses, midwives, public health workers and allied health professionals. Both social movements provided the health workers with an orientation session related to collaboration before starting the assignment.

### **Sampling Strategy**

The interviewees were recruited using purposive sampling. Information about the recruitment sample was shared in the communication network of several health professional organisations. The expectant interviewees filled out an online application form. Eight persons were selected based on the composition of the profession. The composition of the health profession was used to gain an idea of the representation of the population. One criterion for inclusion was that only former assigned health workers from one of the social movements, *Nusantara Sehat* and *Pencerah Nusantara*, could participate. The contract period of each social movement was fixed, so the years of experience were the same length: one year for *Pencerah Nusantara* and two years for *Nusantara Sehat*. Interviewees were excluded from the study if they did not finish the entire assignment cycle. Interviewee recruitment continued until data saturation was reached. When the theoretical framework was assessed against the data and no new themes or patterns emerged, saturation was achieved. Data were also gathered until no additional information was found to determine saturation.

### **Ethical Considerations**

Only the authors could access the research data. Both the mp3 files and interview transcripts were stored only on the personal computers of both authors. Each file was renamed based on the code HCW, which means health workers. Participants' anonymity was ensured by using only this code in the article.

## Data Collection Methods, Instruments and Technologies

The authors conducted in-depth interviews with health workers who had already completed their duties in *Pencerah Nusantara* or *Nusantara Sehat* about their collaboration experience in an interprofessional and community manner in their assignment area. The authors interviewed all the participants using a semi-structured interview guide. The interview guide was developed based on the research model, covering health workers' experiences collaborating within an interprofessional team and community (Appendix 1). Besides the main topics, the authors asked prompt questions to identify any new issues.

## Units of Study

The prospective interviewees were contacted to schedule the interview process. They were asked where the interviews should take place. Finally, three interviewees were interviewed on campus, four were interviewed at the café nearest to their current workplace, and three asked to meet at their homes. Ten health workers were interviewed about their collaboration experience in the assignment area. Each health professional was interviewed using a semi-structured interview. The participants did not originate from the same team or assignment area.

## Data Processing

The average duration of the interviews was one hour and all the interviews were audio-recorded. The records of each interview were transferred to mp3 format and transcribed by the authors. The data were saturated after the tenth participant was interviewed (Appendix 2). Several personal qualities were mentioned repeatedly by the HCWs.

## Data Analysis

A coding framework using deductive and inductive thematic analysis techniques was developed based on the literature review and the interviews. The coding book (see Appendix 3) was generated based on the identified personal qualities in the literature: life values, personalities, and interpersonal communication skills. Moreover, the recognised personal attributes were differentiated based on the interprofessional or community collaboration context. The coding book explained what code is and its definition. The authors conducted coding based on the book independently. They developed or changed the codes based on points learned during the analysis.

Relevant quotes pertinent to the research context were selected. During team meetings, the authors discussed how these quotes fit into the coding framework and why they might not fit, drawing on the guidelines established by Richards and Hemphill (2018) (17). The two authors and an invited researcher did the initial coding of each transcript. To compare the open coding, the researchers developed a detailed coding scheme. The refinements to the coding scheme were made over time. When the team identified any differences in the individual coding, a discussion was held to achieve a consensus. McDonald et al. (2019) (18) suggested that disagreements among team members about the interpretations help refine the codes and foster a deeper reflection on the data, resulting in a more comprehensive and rigorous coding process.

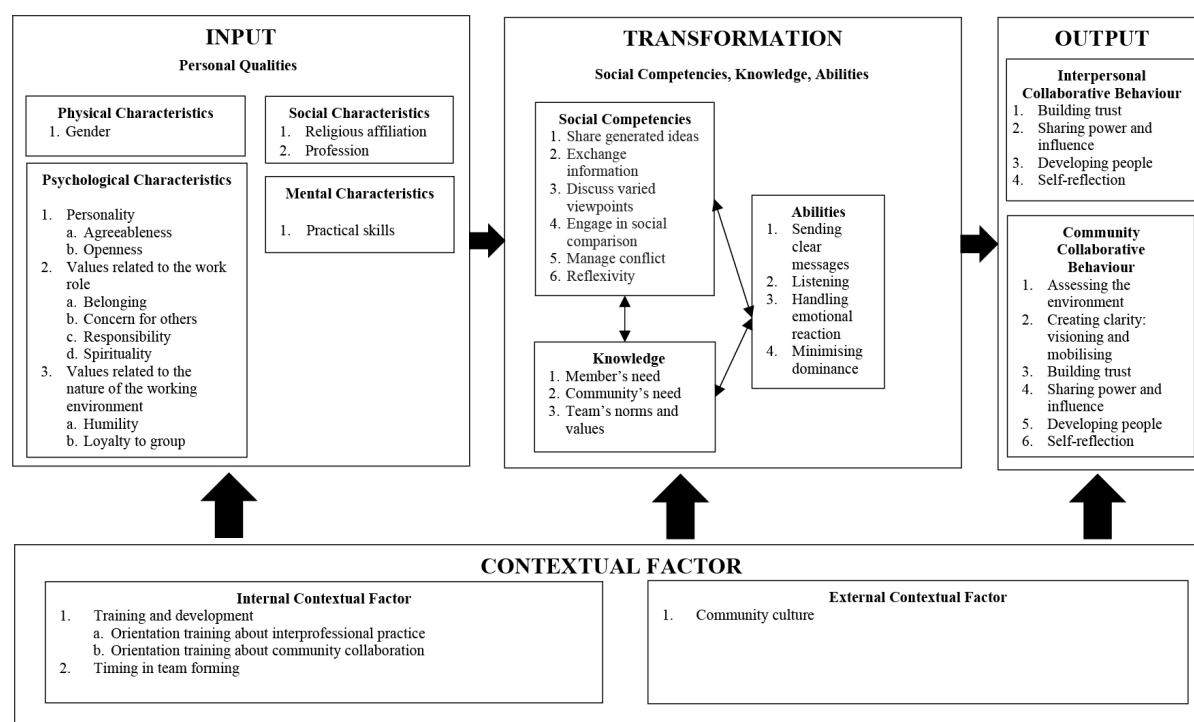


Figure 1: Research model.

## RESULTS

Ten health workers were interviewed to confirm the research model. Several variables in the research model were dismissed and added based on the interviews.

### Input: Personal Qualities

All four personal characteristics proposed were explained, but the variables under these categories changed. The results model is shown in Figure 2.

#### 1. Gender

Physical characteristics were used in our model. However, in this category, all the participants only mentioned gender similarity as an influencing factor in collaborative skills. Hence, “gender” was used as the theme. A male doctor explained, “As the only man in a team, finally, there was a time when I was fed up with all this. Fed up with girls talking about dating, lipstick, and all the girls talk that man cannot get into that conversation” (HCW005). A female public health worker also echoed that gender difference is considered a barrier to collaborative skill development: “Gender affects the ability of collaboration. Men sometimes have high egos” (HCW008).

#### 2. Social characteristics

In this category, characteristics similar to those in the research model was found. Having the same religious views as the collaborators could help the health workers develop collaborative skills: “...four of our members from East Nusa Tenggara and

two from Java, including a friend and me from Central Java. Truthfully, I can quickly adapt with members from East Nusa Tenggara since we have the same religion and similar culture” (HCW001). Similarly, a specific profession could determine collaboration development. For example, because doctors have a higher value in the community, they do not need to show a more vigorous effort to be accepted by the community since the community perceives this profession as more valuable than other professions. One of the team leaders clearly stated, “Doctor status is higher in the eyes of the head of the primary healthcare centre” (HCW003). However, the economic background and status were not affirmed to determine collaborative behaviour.

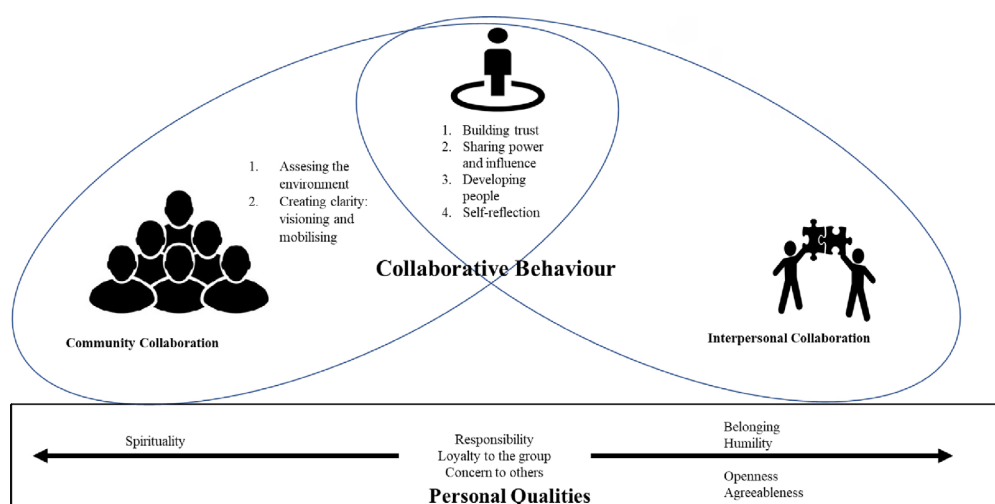
### 3. Mental characteristics

In terms of mental characteristics, three personal qualities were proposed in the research model; however, the personal qualities were slightly changed based on the interviews. Intellectual and educational levels did not contribute to the collaborative skill level. The participants did not consider these qualities as crucial health workers’ practical skills. At the beginning of their assignment, they felt anxiousness: “There was anxiousness at first since we meet new people with different cultures and try to make a change in their health behaviour” (HCW001). As newcomers, local health workers did not readily accept their existence, resulting in mental challenges for each team member: “We are committed to surviving at the beginning of the placement. Whatever happens, we must accept. We will take whatever they (local health workers) ask us to do. They asked us to clean the Puskesmas or even become photocopiers” (HCW002).

Health workers can integrate quickly with the community in remote areas by possessing more practical skills. These practical skills must respond to the community’s needs: “When we have the practical ability, it is easier for us to work together. They (local health workers) will feel that they need us. For example, the doctor mastered specific disease and medicine, or other health workers should also have computer skills” (HCW006). Although we had interpersonal communication skills in the input, all the participants described it as a process during their teamwork. Thus, we recoded the interpersonal communication skills in the transformation stage.

### 4. Psychological characteristics

Moreover, the interviews revealed that the participants described the psychological characteristics in the research model. Psychological characteristics were classified into two primary traits: personality and interpersonal value. Interpersonal value was further divided into two categories: values related to work roles and the nature of the working environment. Health workers associate distinct qualities with different forms of collaboration. The health workers emphasised interprofessional collaboration more than community collaboration, and only interpersonal communication skills were identified as applying to both interprofessional and community collaboration. Other qualities appeared in specific collaborations. The themes were italicised and the collaboration type was put in brackets.



**Figure 2:** Personal qualities of collaborative behaviours.

### Interpersonal value

Health workers mentioned that interprofessional collaboration quality is determined by a member’s sense of belonging, concern for others, humility and responsibility. The description of interpersonal qualities is summarised in Table 1.

**Table 1:** Qualities and descriptive statement

Quality	Definition	Representative quotation
<b>Interpersonal life value</b>		
Values related to the work role		
Belonging (IC)	Sense of fitting in or feeling like an essential part of a team.	We are accustomed to refreshing both just by eating when our families gather.
Concern for others (IC, CC)	Showing concern for the well-being of others besides oneself.	Empathise with their colleagues even if not asked.
Responsibility (IC, CC)	Act as a manifestation of the awareness of obligation.	The fastest way to understand each other is to understand the programme’s objective
Spirituality (CC)	Personal experience in understanding meaning, purpose, and morality.	It is quite difficult to adapt because Islam is a minority.
Values related to the nature of the working environment		
Humility (IC)	Simplicity, not pretending, not thinking of themselves as better than anyone else, or feeling equal to others.	Nobody feels major or minor.
Loyalty to the group (CC)	Someone is willing to perpetuate his relationship with the group.	Teams formed before the assignment cannot mix with the local health workers.

(Continued on next page)



**Table 1:** (Continued)

Quality	Definition	Representative quotation
<b>Personality</b>		
Agreeableness (IC)	Being perceived as a person who is kind, sympathetic, cooperative, warm, and considerate.	Almost all members are easy-going people.
Openness (IC)	Being perceived as a person with the ability to tolerate others, with the capacity to absorb information, and to focus.	Some can accept suggestions.

Note: IC = interprofessional collaboration (collaboration in the team); CC = community collaboration (collaboration with local health workers and other stakeholders in the assignment area).

### *Sense of belonging (IC)*

The belonging value represents the member's sense of fitting in or feeling like they are an essential part of the team. The participants felt this value during their collaboration, leading to a team culture. A team leader stated, "We are accustomed to refreshing just by eating, as a family gathering, even outbound" (HCW006). The participants believed that these team-building activities could improve their sense of belonging as a team. Each team member understood the other, which improved team bonding. "The most important thing for building collaboration is getting to know and understand each other between teams. When it has been built from the beginning, each no longer attaches importance to his ego, and then collaboration can be carried out" (HCW006). This team habit, understanding each other, was supported by another participant who described other cultures that support their sense of belonging: "Thanks to God, our team members looked at each other equally and provided the same opportunity for everyone since the beginning of team formation. We support each other and never want to look for the stage individually" (HCW010). This belonging life value predominantly emphasises member interaction within the team, which could be concluded as interprofessional collaboration skills needed.

### *Concern for others (IC, CC)*

Furthermore, concern for one another was the most frequently mentioned value during the interviews. The midwife in this study said, "The most important thing for building collaborations is getting to know and understand each other between the teams" (HCW004). This statement was echoed by another participant who stated that "...whatever happens during the assignment, we must discuss it together" (HCW002). Unfortunately, as assumed, a professional gap exists in interprofessional collaborations. The general practitioner participant said, "Maybe my friends feel that the doctor's profession has the highest ego in the health sector. I also experienced it at first" (HCW005). He explained, "From the beginning, we committed that all of us are leaders; they must be responsible for themselves, their skills, and their respective programmes" (HCW005). Another health professional in the team mentioned other practices that could make the team occupy this value. For instance, the opinion from the public health profession is, "We have to talk together. No one will talk to each other behind. Because we think the concept of trust is built from there" (HCW002). Concern for others is needed in interprofessional collaboration within the team.

The participants also said that this value is needed in community collaboration, as expressed by the public health practitioner, "The community response to him (the assigned health worker) is bad because he is too selfish" (HCW001). The nutritionist also mentioned a

similar statement: “In my opinion, the one who complains is the fresh-graduated with no experience, for those who have never been active in the organisation is empty. Naturally, he is awkward if they did their programme in society” (HCW006). She assumed that someone who has never been active as an organisation member has never experienced treating other people. This skill could be mastered by learning more with the local health workers who were experts in the field: “In essence, you must learn and keep learning. Read more management books and discuss with experts. My mentor was a senior who had previously served structural position at a health centre or a large organisation” (HCW006).

### *Humility (IC)*

The professional gap, which is already explained in the concern for others section, was considered to be the biggest problem in interprofessional collaborations: “The difference in background and point of view is indeed the biggest challenge, in my opinion, because sometimes there must be times when we feel better than others” (HCW010). The inexistence of humility in interprofessional teams risks the sustainability of trust and affects teamwork.

For me, interprofessional collaboration must begin with acceptance between one another. Accepting that other people can present different views, competencies, and skills from ours can also solve a problem. If you can accept, trust will arise with each other. If this step is successfully passed, then collaboration will begin. However, if any profession feels superior to another, we can do no more? (HCW010)

In response to this professional gap, other participants suggested that health workers must develop humility: “All members are equally based on their competence” (HCW008). Another participant stated, “Dare to suppress your ego and accept joint decisions” (HCW009). Communication within the team is the best solution for suppressing the ego.

Discussion within a team is essential. For instance, when a profession takes its professional view (when analysing a health problem) will be the best solution to solve it, let other professions see problems from other perspectives. We should open that maybe it offers more relevant solutions (with the situation existing). We have to understand that each profession has its uniqueness. (HCW009)

The negative impact of the professional gap could also be avoided by remembering why they have been assigned as a team in the social movement. Our public health professional participant mentioned this while she told her experience of minimising the professional gap in her past team.

From the beginning of our training, it has been emphasised that we are a team, so it will not work individually. At that time, maternal mortality was high, just like in many places in Indonesia. A few months before we arrived, there was one maternal death. So think about how to prevent it or overcome one of the many factors. It is a maternal problem, but from the beginning, we realised that it was not just a midwife’s business. (HCW010)

### *Responsibility (IC, CC)*

The responsibility value should be a principle to motivate people to stay in the team: “There are many health problems, and we have to collaborate across professions to overcome the health problems” (HCW001). Team members’ commitment to accomplishing health workers’ responsibilities grows their spirit to do various hard things in the assigned area.

We are committed to surviving at the beginning. Whatever happens, we have to be accepted, and if there is a need (for local health workers), our responsibility is to help even though out of our job description, for instance, we are asked to clean the office or just become a photographer in their activities. For six months, we cannot even join the health programme at all. (HCW001)

Since a participant (HCW001) explained her experience with her team willing to do various community activities, even though unrelated to their business, the impact of responsibility value on community collaboration should be considered. On the other hand, the value of responsibility is also beneficial to overcome the professional gap in the team. More participants said that building the same understanding of responsibility will diminish the professional gap, which can ruin the team's performance.

Differences in background and point of view are indeed the biggest challenges, in my opinion, because sometimes there must be times when we feel better than others. So it is important at the beginning we set common goals and trust for society so personal egos must be reduced. (HCW010)

...the previously debated things can be resolved well because we have the same goal: to create a healthier society. After that, we can accept and remind each other of what we want to do there. (HCW004)

#### *Loyalty to the group (CC)*

The life value, related to loyalty to the group, determined whether the local health workers could be assimilated. One of the participants, a public health practitioner, stated, "Teams that have been formed before the assignment cannot mix with local health workers" (HCW001). She added that this could happen due to the comfort zones in teams, which then makes them feel unfamiliar with the other team. Further, she explained this value by reviewing the team formation process between *Pencerah Nusantara* and *Nusantara Sehat*. The team in *Pencerah Nusantara* was formed and introduced through orientation training before the assignment. This seven-week training built team bonding in each member, improving loyalty to the group. Surprisingly, each member's early introduction hindered community collaboration. She compared this team formation with *Nusantara Sehat*, who formed their team two days before the assignment.

In fact, in my opinion, we have the advantage of being close to all colleagues in the Puskesmas (public health centre) because the adaptation process is the same. There is no gap (between assigned health workers and local health workers). They are *Nusantara Sehat* or a local health worker. So, we are all one colleague at that time. (HCW002)

The barrier of group loyalty did not just come up internally, but also among local health workers. Our participant stated, "At first, it was somewhat insulated because of the attitude of exclusivity given by the local leaders to our team" (HCW006). Local health workers stigmatised this exclusivity related to the professional gap between each health profession.

Our partner, a doctor, believes that the doctor's duty is not to participate in the community for the programme. Local health workers' mindset supported her understanding, so we are somewhat at odds. We want doctors to also participate in the field, but on the other side, local health workers want doctors to give medical treatment. The value of a doctor is higher in the eyes of the head of the public health centre. (HCW003)

This explanation indicates that the inexistence of loyalty within a team could risk teamwork in interprofessional collaboration. Our team leader participant clearly described that each member's perspective on teamwork determined building loyalty to the group.

It's easier to collaborate with interprofessional (both within the team and local health workers) because there is still the same perspective and loyalty to healthcare. Collaboration with the community was difficult since each community components have its interests. (HCW003)

Another point that should be emphasised, according to the statement of HCW003, is that the different interests of the community will negatively impact the performance of community collaboration. However, the clash of interest is less in interprofessional collaboration, making it easier to manage interprofessional collaboration than in community collaboration.

### *Spirituality (CC)*

While the value of group loyalty determined collaboration with the local health workers, collaboration with the residents was more related to spiritual value. For example, "When we respect their culture and beliefs, they welcome us" (HCW010). This participant explained how to approach the community by touching on their culture and beliefs.

Meet the community and join their activities, not only those related to health activities. Follow the activities of existing residents, approaching the community leader. Because we are (internal or within the country) migrants, we are the ones who have to adjust to society. Approach them with their customs and habits. (HCW010)

The respondents stated that they are migrants since to participate in *Pencerah Nusantara* and *Nusantara Sehat*, they must be moved away from their usual residence in Indonesia to serve as health workers in the service district, remote and underserved Indonesian region for at least two years.

Furthermore, the customs and habits of the community are not always positive. The health workers mentioned that some customs are contrary to their spiritual values. For instance, the unacceptable habit of alcohol consumption and free sex, "However, I am a bit difficult to adapt because Islam is a minority there, and the culture is very different. I could not deal with their drunken habits, all-night partying, and free sex" (HCW001). Different personality values are considered the most complex challenge in community collaboration. The solution is limited to passive action: "It does take a long time, but the only way I can adapt is always remembering what my goal is to join this assignment" (HCW001).

### **Personality**

The health workers believed that specific characteristics determined the success of interprofessional team working. They tend to collaborate with individuals of the same personality and background.

#### *Agreeableness (IC)*

Agreeableness personality is recurrently explained by the team member and leader, which should be exhibited in interprofessional collaboration. A team leader expressed gratitude for her team "because they were logical, moreover, and almost all members were easy-going" (HCW010). This agreeableness in personality was also echoed by another team

member who stated, “Among all placements, my team is a team whose members have the most similar personality. However, it is not so precisely similar indeed, but almost all team members are easy-going” (HCW008). Agreeableness personality is always described as friendly, cooperative, trustworthy, and warm. The participants suggested that exhibiting this personality will make teamwork easier, even though each person’s background is different. On the other hand, HCW001, who previously mentioned that the value of spirituality is essential in collaboration, also re-explained that the agreeableness personality combined with the same spiritual background will be impacted more on the interprofessional collaboration: “We found it relatively easy to adapt due to having almost the same religion and culture” (HCW001).

### *Openness (IC)*

Openness in personality was considered a worthwhile quality for collaboration. The openness personality in interprofessional collaboration helps improve leadership quality and execute a coping strategy for personal stress.

For the team leader, an openness personality will be meaningful to accommodate the different perspectives in the team. Team leader participant exhibits the importance of the openness personality in self-reflection: “I started by asking for their expectation of me as a leader. It will help me to perform well, give information on how to cooperate with another member, and suggest me to fix my leadership style” (HCW003). Moreover, an open personality is also needed to meet all member’s suggestions when designing a project plan: “Some members felt that he was the most capable, so he did not need any suggestions” (HCW007). To this statement, openness is also meaningful in pressing down the ego in the professional gap when designing a health programme.

Openness personality was shown to help manage the emotional stress during the assignment period. A respondent talked about her experience when facing a problem: “I cried alone first, and then I asked for other’s opinions” (HCW004). By asking for other opinions, the participant demonstrated an open personality in improving the teamwork quality. Team members with open personalities also have a lower risk of saturation towards working conditions. “As the only man in a team, finally, there was a time when I was fed up with all this....The solution at that time was, look for another person to hang out” (HCW005).

### **Transformation and collaborative behaviour**

In addition to successfully identifying the personal qualities of health workers in terms of collaboration skills, how these qualities affect collaborative skills was analysed. First, health workers with values related to the work role will always try to understand members’ and the community’s needs, while someone with a values-related nature of the working environment will always try to understand the team’s norms and values.

The participants explained that belonging, concern for others, responsibility, and spirituality motivate them to understand others. They realise their role as a team member, so understanding others’ needs is their main job to make the collaboration succeed.

From the orientation period, we always underlined that we are a team, so we will not work individually....when we met maternal death cases, I thought there must be multiple factors which should be solved by numerous heads too. We realised that it was not only the midwife’s business. (HCW010)

The division of work was the most common theme explained as the key to transforming the value. The division of work refers to breaking down a task or project into smaller, more manageable components assigned to different individuals or groups. Each person or group then focuses on their assigned component, working collaboratively with others to complete the task or project. One of the participants told her experience in starting to analyse health problems: “This division of tasks is essential for me too. It does not mean we work individually, but after the root of the problem is found, we will discuss in a team to find a solution together” (HCW009). The precise job description within the team also helps the member to understand other members’ needs: “There is no overlap. The person in charge is responsible for taking control. Vice versa, for example, even though I am not in charge, I will back up everything I can. The point is communication, in my opinion” (HCW008).

On the other hand, interpersonal value, which focuses on the nature of the working environment, helps health workers understand the team’s values and norms. Our nurse participant told her experience showing humility value: “We can learn to decrease personal ego and a sense of knowing more than others. Because I am aware, each profession has its uniqueness” (HCW009). Humility and loyalty to the group make health workers self-evaluate: “We often discuss problems, precisely, introspection. So, there is no such thing as blaming and dropping each other” (HCW006).

Second, agreeableness and openness personality transform into social competence by building creative collaboration. Health workers’ personalities, which are open to other perspectives and permissive to other ideas, encourage creativity in collaboration. A midwife in this study showed her gratitude by being open-minded towards other perspectives: “As a midwife, I cannot run the programme if I do not work with other friends. I often ask nutritionists and dentists to give their idea. By collaborating, my programme becomes more attracting” (HCW004). This statement was also strengthened by a doctor who executed project-related health budgets. He stated, “By being more open to the community, we were able to build trust so that we could finally smoothly score the budget plan” (HCW005). The openness and agreeableness personality gives health workers a broad perspective and idea of doing things differently with a calculative plan. The participants suggest that health workers should have self-motivation to adopt this personality: “Sociable, do not hesitate to open the conversation first, appreciate what is conveyed by the person, adaptive, be willing to involve with many people, do not go around on your own” (HCW007).

Third, the knowledge and social competencies function only by the existence of interpersonal communication skills. The collaboration quality—both in an interprofessional manner and in the community—was also determined by interpersonal communication skills. A team leader stated, “By having good communication, the things that were debated can be resolved” (HCW004).

This study proposed health workers’ abilities to understand others’ needs, build a firm mutual integration, minimise dominance, and generate solutions as the abilities that transform personal qualities into collaborative behaviour. After the qualitative phase, the abilities were revised by listing interpersonal communication abilities and the three initial abilities were expelled in the research model. The participants explained that the essential ability to collaborate is communication. Moreover, health workers should have effective communication skills to understand others’ needs, build mutual integration, minimise dominance and generate solutions. Three primary communication skills were needed, as described in the following sections.

*Sending clear messages (IC, CC)*

As stated by the participants personally, the health worker should be able to deliver their thoughts: “We continue to chat, both formally and informally” (HCW008). This ability was also obtained when engaging with the community: “There is no problem with communication because we use various communication channels. Even though we are close, we always chat” (HCW008).

Moreover, sending clear messages in a problematic situation within an interprofessional team brings more empathy between team members.

If I know something is wrong, I always go straight to the point and ask about the problem. When the person does not accept my suggestion, OK, it is time for me to say, “Whatever you like.” What can be done next is to keep supporting his activities, asking, “What can be helped?” (HCW007)

This statement also relates to the importance of emotional handling in interprofessional and community collaboration.

*Listening (IC, CC)*

No participant mentioned listening as an essential ability in communication, but this study confirmed that this ability should be a part of interpersonal communication. Communication is two ways; hence, listening is the ability that cannot be separated from sending the message. One participant implied it: “Do not forget to stay open and learn from each other” (HCW006) and was echoed by other participants, “Be brave to suppress personal egos and accept joint decisions...and the most important thing is to learn from each other” (HCW009).

*Handling emotional reactions (IC, CC)*

Health workers should have a more personal approach, even though it contradicts their emotions. For example, “We want to be accepted well. So that is fine, and we are trying to be friendly” (HCW006). Moreover, they should also be able to cope with situations that emotionally affect performance: “If there are problems or not as expected, just forget for a moment” (HCW001) and “I cried alone first, and then I asked for others’ opinions” (HCW004).

Health workers explained that it is vital to stay calm and always be a health worker with integrity so that they can manage emotional reactions related to the community. Public health participants told her team experience when the community underestimated their health programme.

“As immigrants who will stay for two years, we want to be well received. So, we are trying to be friendly and helpful. Every team member must be accommodating, not hesitate to open the chat first, appreciate what the community delivers, and be adaptive. Finally, do not go around just with your own will” (HCW007).

## DISCUSSION

This study aimed to analyse the personal qualities exhibited by health workers that influence their collaborative skills in interprofessional and community collaboration. Four interpersonal life values of health workers (belonging, humility, openness, and

agreeableness) were related to interpersonal collaboration behaviour, three values (responsibility, loyalty to the group, and concern to others) were related to both collaborative behaviours and only one value (spirituality) was related to community collaboration behaviour. Personality qualities only affect interprofessional skills. These personal qualities manifested into collaborative behaviour through three transforming mechanisms.

Collaboration has become the most suggested solution in global health action (19, 20). Each contributor has a different perspective, which may lead to a more challenging collaboration (21). Collaborative skills determine how a group of people will be successful in collaboration. Even though getting everybody on board benefits innovation (22), individual health professionals can hamper the team's processes and overall progress (23, 24). This study found that an interprofessional team could also experience challenges with professional egoism while they do their primary job of collaborating with the community.

Health workers work with their cross-professional team members and the community when executing assignments in remote areas. This study identified personal qualities that affect health workers' collaborative skills both in interprofessional and community collaboration. These personal qualities are identified through thematic coding of interpersonal communication abilities, personality, and life values, which were often studied in previous research.

First, this qualitative study shows that interpersonal communication abilities contribute to developing interprofessional and community collaborative behaviour, while personality qualities only affect interprofessional skills. In an interprofessional team, each team member should understand the professional identity, roles, responsibilities and partnerships among their team members (25). Hence, communication abilities allow each member to understand these aspects. Having effective communication skills can prevent misperceptions and assumptions about others' professions. It also explains why personality, especially agreeableness and openness, determined interprofessional collaborative skills. These two personalities correlate with the motivation to engage and participate in a collaborative group (26). Health workers' agreeableness and openness personalities determine their motivation for how frequently they will try to communicate with their team members. According to the community of practice theory, when a group of interprofessional health workers already interact and establish a strong shared interest, concern, and knowledge, this group also improves their ability to perform tasks within their team more effectively (27, 28). This explains why collaborative community behaviour in this study was only affected by communication skills. In conclusion, the health workers have proper community collaborative skills only after interprofessional teams successfully collaborated with their team.

Second, this study found that specific values were related to interprofessional collaborative skills, although the rest were only for collaborative community skills. The different functioning qualities of community and interpersonal collaboration were also identified for life value. The contrasting functions of life values related to collaborative leadership skills are complicated since they need communication abilities to determine and exercise division of work for their team members and with the local health workers. The life value of responsibility was substantial in determining interprofessional collaborative skills. Health workers who value responsibility as essential will focus best on accomplishing team objectives (21). They tend to neglect the professional silo and try to engage more with other health workers through the jurisdictional team process (24). Future studies must analyse the combination with other values, which are more socially oriented, that is, belonging and being concerned for others.



Belonging is the sense of fitting in or feeling like an essential part of a team (29–31). A study about belonging in an intensive care unit revealed that belonging among health workers happens in the context of work through knowledge sharing. In contrast, it did not happen with the patient's family (30). A sense of belonging to a group could function because it allows health workers to explore alternative cooperation methods, find convenient relationships with other members, and offer specialised contributions (31). Moreover, belonging has already been identified as one of the predictors of building respect and dignity within teamwork (32). This supports why humility did not affect this study's community collaborative leadership skills. Another study also revealed that belonging mediates the team's ability to enjoy a sense of dignity, respect, and social belonging (33), hence, this study has attempted to conclude why it is more related to interprofessional than community collaboration.

Moreover, the findings also show that how successful the health workers collaborated with the community was more related to life value, focusing on the loyalty expressed to the group and spirituality. Comparable perceptions between the local and assigned health workers exist when discussing how their collaboration could work (34). This study found that the earlier team formation process will strengthen the loyalty to the group, leading to the assigned team's persistence in defending their collaboration perception. A study on the loyalty of a researcher to their research group explained that loyalty has a considerable positive impact on the knowledge flow in a team, but negatively affects knowledge transmission when it happens in a dense group (35). Therefore, when interprofessional team members have a higher level of loyalty to their group, they tend to share knowledge related to team improvement but are bolder regarding the barrier between the inner and outer groups.

Since people's behaviour and decision-making are influenced by their spirituality (36–38), the health workers will be driven by their spiritual values. Spiritual values are also related to collaborative leadership skills within the community, as determined in this study. For instance, the health worker participant negatively valued drinking habits, since they were contrary to her religion. Thus, she will negatively perceive a community with the habit and harm their collaboration process with the community. Workplace spirituality has also been proven to be a causal precursor to individual performance (36, 39). The employees' spirituality has a positive effect on their job performance by considering the employees' spirituality as a personal resource (39). This explains why spirituality significantly affects collaborative leadership skills within the community.

In addition, the findings indicate that agreeableness and openness are the personalities contributing to collaborative skills development. This study found that these personalities determine collaborative skills by improving the abilities of team members to allow them to communicate in an interpersonal manner. Team members with a higher agreeableness of personality are associated with more excellent ethical behaviours (40). Moreover, a team member with higher agreeableness will perform more transparently within the group (41). It brings a worthwhile advantage to building teams and maintaining work harmony. Thus, in conclusion, an interprofessional team's most critical communication abilities include holding back all emotional dynamics about teamwork. Each member must establish good relationships with other team members to strengthen teamwork (42). Agreeableness in terms of personality will help team members to perform better in emotion control. At the same time, an open personality will help health workers gain broad perspectives from different people.

## CONCLUSION

The specific personal qualities of health workers determine each type of collaboration. Health workers' abilities to collaborate with the interprofessional team and community are determined by their personalities, life values, and communication skills. The personality of health workers affects their collaborative skills with the community and is directly related to interprofessional collaboration skills. This study found that *Pencerah Nusantara* and *Nusantara Sehat's* placement and training orientation mechanisms are essential in influencing health workers' life values. However, because these were not analysed in this study, the findings were limited to the personal and interpersonal factors of collaboration. Further studies are needed to assess how human resource management of these social movements affects health workers' qualities, as the identified qualities will be valuable for describing the job specifications of health workers in remote areas.

Furthermore, the collaborative skill development model will substantially stimulate collaborative skills. Because the qualities involved in community collaboration were identified, the strategy used in the community approach could be modified. This study supports filling a knowledge gap on health workers' qualities in determining their collaborative skills. The qualities that function in both interprofessional and community collaborations were identified and how these qualities transform into collaborative behaviour were described.

## ACKNOWLEDGEMENTS

The authors thank *Pencerah Nusantara* and *Nusantara Sehat* for permitting this study to connect with the volunteers. Universitas Airlangga funded this research under the *Penelitian Dosen Pemula* Scheme (86/UN3/2018). The authors also thank Ms. Alya Hazfiarini from Melbourne School of Population and Global Health, Australia, for editing the language in this article.

## ETHICAL APPROVAL

The research protocol was approved by the Public Health Ethics Committee of Universitas Airlangga (203-KEPK).

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## APPENDICES

### Appendix 1

#### Interview Guideline

1. What is your experience in collaborating with your team and the local community? Can you give an example of a collaboration you have done in your assignment area (interprofessional and community)? What qualities of health workers should be performed?
2. What has been the most significant barrier for you related to collaborating (interprofessional and community)? How do you cope with that?
3. Is there any member who faces difficulties in integrating with others? Does it influence their work? How do you or others react to this situation?
4. Are there any qualities that you can suggest to be owned by the following assigned health workers? Are there specific communication skills that health workers should own to collaborate? Are there particular personalities that health workers should own to be able to collaborate? Are there specific life values that health workers should own to be able to collaborate?
5. Based on your experience, what can you suggest for improving collaborative skills?

### Appendix 2

#### List of Interviewees

Interviewee	Gender	Profession	Role in team	Base	Year(s) of experience
HCW001	Female	Public Health	Member	<i>Nusantara Sehat</i>	2
HCW002	Female	Public Health	Member	<i>Nusantara Sehat</i>	2
HCW003	Male	Public Health	Leader	<i>Pencerah Nusantara</i>	1
HCW004	Female	Midwife	Member	<i>Nusantara Sehat</i>	2
HCW005	Male	General Practitioner	Leader	<i>Pencerah Nusantara</i>	1
HCW006	Female	Nutritionist	Leader	<i>Pencerah Nusantara</i>	1
HCW007	Female	Public Health	Member	<i>Pencerah Nusantara</i>	1
HCW008	Female	Public Health	Leader	<i>Pencerah Nusantara</i>	1
HCW009	Female	Nurse	Member	<i>Pencerah Nusantara</i>	1
HCW010	Female	Public Health	Member	<i>Pencerah Nusantara</i>	1

### Appendix 3

#### Qualitative Codebook

Quality	Definition
<i>Life value</i>	
Achievement	Showing a determination to reach every target.
Belonging	Showing concern for the well-being of others besides oneself.
Concern for the environment	Passionate emotion toward other living creatures.
Concern for others	Showing concern for the well-being of others besides oneself.
Creativity	Encouraging to continually set new things or different ways of thinking.
Financial prosperity	Targeted to earn money or direct reward for duties.
Health and activity	Showing determination always to fit in physically and mentally.
Humility	Simplicity, not pretending, not thinking of themselves as better than anyone else.
Independence	Free from any intervention.
Privacy	Giving priority to be not disturbed by others.
Responsibility	Act as a manifestation of the awareness of obligation.
Loyalty to the group	Someone's willing to perpetuate his relationship with the group.
Scientific understanding	Always think based on an empirical study.
Spirituality	Human experience in understanding meaning, purpose, and morality.
<i>Personality</i>	
Extraversion	Perceived as a person who loves to interact with society.
Agreeableness	Perceived as a person with a kind, sympathetic, cooperative, warm, and considerate.
Conscientiousness	Perceived as a person with organised and careful thinking.
Neuroticism	Perceived as a person who constantly feels insecure and unstable emotionally.
Openness	Perceived as a person with the ability to tolerate others, with the capacity to absorb information, and to focus.
<i>Interpersonal communication skills</i>	
Sending clear messages	Ability to deliver their thinking to an audience.
Listening	Ability to hear others.
Giving and getting feedback	Ability to send the exact responses to others (not emotion).
Handling emotional reaction	Ability to cope with emotional responses from others.

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(Continued)

Quality	Definition
<i>Collaboration</i>	
Interpersonal collaboration	Working with someone as an individual.
Community collaboration	Working with an organisation, group of people, or community as large.