Impact of the COVID-19 pandemic on the otolaryngology residency training program in a university-based hospital in Bangkok, Thailand

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Abstract
Objective: This study aimed to evaluate the impact of the COVID-19 pandemic on the otolaryngology residency training program in Vajira Hospital, Navamindradhiraj University.
Methods: Conducted from October 2021 to January 2022, this cross-sectional survey included all residents, residents who graduated in 2021, and the attending staff. One form was sent to both resident groups for self-assessment and another form to the attending staff for resident assessment. The survey questions were about attitude toward COVID-19 service, knowledge, outpatient department service, surgical skills, and burnout assessment using the Maslach Burnout Inventory.
Results: This study included 17 residents and 9 attending staff members. COVID-19 indeed had affected the clinical and surgical training. Regarding the attitude toward COVID-19 services, the residents were moderately satisfied. They were concerned about work suspension resulting from infection and also death from COVID-19. N95 masks and other protective gears were scarce. Compared with those during the prepandemic era, residents had fewer academic activities, and they preferred hybrid teaching. The inpatient department, outpatient department, and surgical training opportunities, as well as elective and urgent surgeries, were also reduced. The attending staff considered 1-year extension of the training program, but the residents disapproved. The residents became less confident both in outpatient department service and surgical skill, and they felt emotional exhaustion, depersonalization, and decreased sense of personal accomplishment.
Conclusion: COVID-19 pandemic had significant impact on otolaryngology residency training programs. It did not only affect burnout among residents but also caused a perception of skill and knowledge reduction.

Keywords
COVID-19, COVID-19 pandemic, otolaryngology resident, burnout

Introduction
The coronavirus disease 2019 (COVID-19) outbreak was first reported in Wuhan, China, in 2019, and was declared as a pandemic by the World Health Organization in 2020. The symptoms ranged from asymptomatic presentation to severe pneumonia, which has led to enormous fatalities worldwide.1,2

Thailand has been dealing with this pandemic since 2020. Millions of people were infected, and the healthcare system was overwhelmed.3 In response to this pandemic, all medical personnel were recruited to participate in COVID-19 service. Routine hospital services, including the outpatient department (OPD), inpatient department (IPD), and surgical operations, were interrupted, and all elective cases were postponed. Thus, COVID-19 has made

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a huge impact on the medical education system, including the disruption of the residency training program.\textsuperscript{4,5}

This study aimed to demonstrate the impact of the COVID-19 pandemic on the otolaryngology residency training program, focusing on knowledge, surgical skills, and burnout among residents.

**Materials and methods**

This cross-sectional study was conducted in the otolaryngology department of Vajira Hospital, Navamindradhiraj University after obtaining the approval of the institutional review board (IRB no.: 167/64E). Participants included all residents, residents who graduated in 2021, and the attending staff. Those who declined to participate were excluded from the study. The electronic survey was sent and collected from October 2021 to January 2022. This survey had two different forms: one was sent to both resident groups for self-assessment and the other form was sent to the attending staff for resident assessment. The questionnaire has six parts: demographic data, attitude toward COVID-19 service, knowledge, OPD service, surgical skills, and burnout assessment using the Maslach Burnout Inventory (MBI).\textsuperscript{6,7} The questions were generated by six otolaryngology attending staffs and one surgery attending staff and 14 pilot interviews were conducted (from seven otolaryngology staffs and seven otolaryngology residents from another institute). The questions were validated by residents and the attending staff from four other faculties and by the Cronbach’s $\alpha$ (residents, 50 items: $\alpha=0.973$; staff, 40 items: $\alpha=0.728$).

**Statistical analysis**

Continuous data were described by the mean and standard deviation ($\pm SD$) if data were normally distributed. Otherwise, median (with minimum-maximum) was used. The corresponding significance test was performed using an independent $t$-test\textsuperscript{8} or Mann–Whitney $U$-test.\textsuperscript{8} They were described by frequency and percentage for categorical data and were compared using Fischer’s exact test.\textsuperscript{8} All analyses were performed using STATA software version 14.2 (STATA Corp., College Station, TX, USA). Significance was indicated by $p$-value $<0.05$.

**Results**

**General characteristics**

A total of 17 residents and 9 attending staff members were analyzed (Table 1). All residents (100%) and 64.28% of the attending staff responded. Of the 17 residents, 4 were in the first-, second-, and third-year levels separately and 5 graduated in 2021, with a mean age of 29.41 years. Most of the residents were female (64.71%), two were married, two (11.76%) had COVID-19 infection, and eight (47.06%) had been quarantined. The attending staff had a mean age of 43.78 years, with a mean length of experience of 11.78 years. All residents were assigned to work for the COVID-19 service, and the median working day was 2 days per week, of which 41.18% had 1–4 working hours per day and 35.29% had 4–8 working hours per day.

Regarding the attitude toward COVID-19 services (Table 2), residents were moderately (median = 3) satisfied. They were concerned (median = 4) about acquiring COVID-19 infection...
from work and spreading COVID-19 between family and colleagues. They moderately (median = 3) had an opportunity to spend time with their family. They were also concerned (median = 4) about being suspended from work because of being at risk/infected with COVID-19 and dying from COVID-19.

In the aspect of faculty’s support, they strongly agreed (median = 5) about being trained to properly use personal protective equipment. They received moderate support (median = 3) for the N95 mask and enough support (median = 4) for other protective gears.

Knowledge

The residents and the attending staff mostly agreed about all aspects of knowledge, except for the training period (Table 3). The attending staff considered that the training program should be extended for 1 more year, which was disapproved by the residents (median = 2 in the resident group, median = 3 in the attending staff, \( p = 0.028 \)). The amount of academic activities was moderately decreased (median = 3) compared with that during the prepandemic era. Although they participated in online academic conference activities (median = 4), the majority of the residents and attending staff preferred the hybrid teaching system (face-to-face and virtual teaching). Furthermore, the opportunities for IPD, OPD, and surgical training were reduced (median = 4–5). The department also provided other training forms, which were helpful in learning during COVID-19. Additionally, they had more time for self-study and research work, but they also faced more difficulties in research work because of the COVID-19 outbreak. Meanwhile, the residents who graduated in 2021 moderately experienced lack of confidence in real-life practice.

OPD services

In OPD services (Table 4), both the attending staff and residents themselves were confident in the residents’ skills in laboratory and radiological interpretation. However, the attending staff were less confident in the resident’s skill at history taking, physical examination (staff: median = 4, mean = 3.33 ± 0.87; residents: median = 4, mean = 4.06 ± 0.66), and disease diagnosis (staff: median = 3, residents: median = 4) than residents themselves.

Moreover, both study groups were confident in residents’ skills to handle most of the OPD complaints, except for otalgia, which the attending staff had lower confidence (staff: median = 4, mean = 3.67 ± 0.5, residents: median = 4, mean = 4.24 ± 0.66).

Surgical skills

Both groups were also confident in residents’ surgical skills according to the training standards of their respective year (Table 5). Residents were quite confident (median = 4) in performing myringotomy, tracheostomy, tonsillectomy, and direct laryngoscopy. They also felt somewhat confident (median = 3) in awake tracheostomy, thyroid surgery, tympanoplasty, endoscopic sinus surgery, esophagoscopy, bronchoscopy, temporal bone dissection, and emergency management. Total laryngectomy was the only procedure (median = 2) that both staff and residents felt slightly confident. For temporal bone dissection, attending staff had more confidence in residents than the residents had confidence in themselves (median staff = 4, residents = 3).

Burnout assessment

Burnout syndrome (Tables 6 and 7), which includes emotional exhaustion (EE), depersonalization (DP), and decreased sense of personal accomplishment (PA), obtained a mean and standard deviation of 32.94 ± 12.00, 23.94 ± 6.49, and 8.88 ± 5.22, respectively. Most residents had high levels of EE (64.71%), DP (94.12%), and PA (100%).

Discussion

During the COVID-19 outbreak in Thailand, Bangkok was the most affected. As the largest university-based hospital of Bangkok metropolitan administration, Vajira Hospital had

| Table 2. Attitude toward COVID-19 service. |
|-------------------------------------------|
| **Total (n = 17)** | **Median (min–max)** |
| 1. Satisfaction of being assigned to care for a COVID-19 patient | 3 (2–4) |
| 2. Concerned about infecting COVID-19 from work | 4 (2–5) |
| 3. Concerned about the possibility of spreading COVID-19 from family to colleagues | 4 (2–5) |
| 4. Concerned about the possibility of spreading COVID-19 from colleagues to family | 4 (3–5) |
| 5. During the COVID-19 pandemic, you have the opportunity to spend time with your family | 3 (1–5) |
| 6. Concerned about being suspended from work due to being at risk/infected with COVID-19 | 4 (2–5) |
| 7. Concerned about dying from COVID-19 | 4 (2–5) |
| 8. Get trained in using PPE equipment properly | 5 (3–5) |
| 9. Get enough protective gear like Face-shield, Goggles, PAPR | 4 (1–5) |
| 10. Get enough N95 mask | 3 (1–4) |

PPE: personal protective equipment; PAPR: powered air purifying respirator.
### Table 3. Knowledge.

|                          | Residents (n = 17) | Attending staffs (n = 9) | p-Value |
|--------------------------|--------------------|--------------------------|---------|
|                          | Median (min–max)   | Median (min–max)         |         |
| 1. The amounts of academic activities decreased compared to the pre-COVID-19 situation such as interesting case activities, journal club, topic review, lecture, interdepartmental conference | 3 (2–5) | 3 (3–5) | 0.485 |
| 2. Participate in online academic conference activities such as webinar, zoom | 4 (3–5) | 4 (3–5) | 0.771 |
| 3. What kind of education would you like to choose between face-to-face teaching and virtual teaching? | | | 1.000 |
| Face-to-face teaching, n (%) | 4 (23.53) | 2 (22.22) |         |
| Virtual teaching, n (%) | 0 | 0 |         |
| Hybrid (face-to-face + virtual), n (%) | 13 (76.47) | 7 (77.78) |         |
| 4. Reduced opportunity for inpatient department training | 5 (2–5) | 5 (2–5) | 0.755 |
| 5. Reduced opportunity for outpatient department training | 4 (3–5) | 5 (2–5) | 0.077 |
| 6. Reduced opportunity for surgical training | 5 (2–5) | 5 (2–5) | 0.913 |
| 7. If the surgical training was reduced, which operation was reduced? | | | 0.105 |
| Elective, n (%) | 8 (47.06) | 6 (66.67) |         |
| Elective, urgency, n (%) | 8 (47.06) | 1 (11.11) |         |
| Elective, urgency, emergency, n (%) | 1 (5.88) | 2 (22.22) |         |
| 8. The department provided other forms of training to replace the surgical practice | 4 (3–5) | 4 (2–5) | 0.759 |
| 9. Using simulated training equipment was helpful in learning during COVID-19. | 4 (3–5) | 4 (3–5) | 0.205 |
| 10. Had more time for self-study | 4 (2–5) | 5 (3–5) | 0.626 |
| 11. Facing difficulties in research work due to the COVID-19 outbreak | 4 (3–5) | 5 (4–5) | 0.082 |
| 12. Had more time for research work during COVID-19 | 4 (2–5) | 5 (3–5) | 0.100 |
| 13. Due to COVID-19 situation, the training period should be adjusted to gain an additional 1 year of experience | 2 (1–4) | 3 (1–5) | 0.028* |
| 14. Being unconfident in real-life practice after graduation in 2021 (Only graduated residents and attending staffs) | 3 (2–4) | 4 (2–5) | 0.071 |

*Significant if p < 0.05.

### Table 4. Outpatient department services.

|                          | Residents (n = 17) | Attending staffs (n = 9) | p-Value |
|--------------------------|--------------------|--------------------------|---------|
|                          | Median (min–max)   | Median (min–max)         |         |
| 1. Confident in history taking and physical examination | 4 (3–5) | 4 (2–4) | 0.043* |
| 2. Confident in laboratory and radiological interpretation | 4 (2–5) | 4 (2–4) | 0.281 |
| 3. Confident in disease diagnosis | 4 (3–5) | 3 (2–4) | 0.046* |
| 4. Confident to handle otology complaint | | |         |
| Otalgia | 4 (3–5) | 4 (3–4) | 0.036* |
| Otorrhea | 4 (3–5) | 4 (3–4) | 0.051 |
| Hearing loss | 4 (3–5) | 4 (3–4) | 0.755 |
| Vertigo | 3 (3–5) | 4 (1–4) | 0.976 |
| 5. Confident to handle rhinology complaint | | |         |
| Rhinorrhea | 4 (3–5) | 4 (3–4) | 0.811 |
| Nasal blockage | 4 (3–5) | 4 (3–4) | 0.755 |
| Epistaxis | 4 (3–5) | 4 (3–4) | 0.685 |
| 6. Confident to handle laryngology complaint | | |         |
| Hoarseness | 3 (3–5) | 4 (2–4) | 0.241 |
| Airway obstruction | 4 (3–5) | 4 (2–5) | 0.767 |
| 7. Confident to handle throat, head, and neck complaint | | |         |
| Sore throat | 4 (3–5) | 4 (3–4) | 0.180 |
| Dysphagia | 4 (3–5) | 4 (3–4) | 0.858 |

*Significant if p < 0.05.
hospitalized an enormous number of patients with COVID-19. This study recruited the attending staff and residents of the otolaryngology department because they were most frequently assigned at the front line. Additionally, the COVID-19 service interfered with the residency education program. Generally, the residents were moderately satisfied with the COVID-19 service. However, they were concerned of acquiring COVID-19 infection and spreading the disease between themselves, family, and colleagues and of dying from COVID-19. These results are similar to a study in Pakistan.9 The insufficient support of the protective gear, especially the N95 mask, from the faculty may have caused these issues (Table 2).

The pandemic led to a huge adaptation of training programs worldwide.4,9–12 While our results showed the increment of virtual teaching, residents still preferred face-to-face teaching, similar to a study in India.5 Additionally, the time for self-study and research work increased, while the time in OPD, IPD, and surgical training decreased, similar to the previous study results of many countries.13–15 The attending staff considered a 1-year extension of training program, but the residents disagreed. This result is contrary to the studies in Peru4 and Portugal,16 where the residents preferred to extend for 1 more year. However, four residents who graduated in 2021 showed lack of confidence in real-life practice (median = 3), thereby reflecting the need for extending the training period (Table 3).

Residents felt confident in history taking, physical examination, laboratory and radiological interpretation, and disease diagnosis, but the attending staff only had confidence in residents in laboratory and radiological interpretation. In addition, both groups were confident in residents’ skill to handle most of the OPD complaints, except for otalgia, which the attending staff had lower confidence. The lower confidence level of the attending staff on residents’ skill in history taking, physical examination, and disease diagnosis might result from the reduced number of patients and surgical operations. While confidence of the attending staff on residents’ skill in laboratory and radiological interpretation might result from studied through virtual teaching (Table 4).

For the surgical skills, both the attending staff and residents themselves were confident in residents’ surgical skills according to the training standards of their respective year. Both were least confident in total laryngectomy and somewhat confident in awake tracheostomy, thyroid surgery, tympanoplasty, endoscopic sinus surgery, esophagoscopy, bronchoscopy, temporal bone dissection, and emergency management. Case reduction and surgical skill perceived by both residents and staffs were similar to previous studies that measure the case numbers reduction,17,18 and also similar to the previous study that revealed a significant decrease in surgical case volumes.19 The hospital’s policy of reducing surgical cases might cause their lack of confidence. The more difficult and complicated the procedures were, the more the residents felt unconfident (Table 5).

In MBI analysis, most of the residents had high EE and DP scores but had a low PA score. High EE level was also found in a prepandemic study.20–22 However, compared with those in the prepandemic era, the high DP level and low PA level in our study differed from those in another pandemic study, which showed both low DP and PA scores.20,22 The experiences of emotional stress, frustration, exhaustion, dehumanization, and despair might reflect stress from the COVID-19 service (Tables 6 and 7).

### Table 5. Surgical skills.

|                              | Residents (n = 17) | Attending staffs (n = 9) | p-Value |
|------------------------------|-------------------|-------------------------|---------|
| 1. Confident in surgical skills according to the training standards of their own year | 4 (2–5)             | 3 (2–4)                 | 0.177   |
| 2. Surgical procedure        |                    |                         |         |
| 1. Myringotomy               | 4 (2–5)            | 3 (2–5)                 | 0.887   |
| 2. Tracheostomy              | 4 (3–5)            | 4 (3–5)                 | 0.396   |
| 3. Awake tracheostomy        | 3 (1–5)            | 3 (1–4)                 | 0.865   |
| 4. Tonsillectomy             | 4 (1–5)            | 4 (2–4)                 | 0.668   |
| 5. Thyroid surgery           | 3 (1–5)            | 4 (3–4)                 | 0.263   |
| 6. Tymanoplasty              | 3 (1–4)            | 2 (1–4)                 | 0.817   |
| 7. Endoscopic sinus surgery  | 3 (1–5)            | 3 (2–4)                 | 0.406   |
| 8. Direct laryngoscopy       | 4 (1–5)            | 4 (3–4)                 | 0.334   |
| 9. Esophagoscopy             | 3 (1–5)            | 3 (2–4)                 | 0.674   |
| 10. Bronchoscopy             | 3 (1–5)            | 2 (1–4)                 | 0.676   |
| 11. Total laryngectomy       | 2 (1–4)            | 2 (1–4)                 | 0.556   |
| 12. Temporal bone dissection | 3 (1–4)            | 4 (2–5)                 | 0.043*  |
| 13. Emergency case management| 3 (1–5)            | 4 (3–4)                 | 0.836   |

Mann–Whitney U-test.
*Significant if p < 0.05.
This study has several limitations. As the data was collected via the questionnaire-based method, it could lead to a recall bias among participants. Even though all residents were included, the sample size remained small, which might affect the generalizability of this study. It was conducted in single center. Therefore, applying results of this study to other institutes, where COVID-19 infection rates were different, should be cautioned.

### Table 6. Maslach Burnout Inventory.

| Item                                                                 | Every day (0 point) | A few times a week (1 point) | Once a month or less (2 points) | A few times a month (3 points) | Once a year or less (4 points) | A few times a year or less (5 points) | Never (6 points) |
|----------------------------------------------------------------------|---------------------|-------------------------------|---------------------------------|-------------------------------|----------------------------------|--------------------------------------|-----------------|
| 1. I feel emotionally drained from my work                           | —                   | 3 (17.65)                     | 4 (23.53)                       | 3 (17.65)                     | 3 (17.65)                       | 4 (23.53)                            | —               |
| 2. I feel used up at the end of the work day                         | 1 (5.88)            | 4 (23.53)                     | 3 (17.65)                       | 4 (23.53)                     | 2 (11.76)                       | 1 (5.88)                             | 2 (11.76)       |
| 3. I feel fatigued when I get up in the morning and have to face another day on the job | —                   | 4 (23.53)                     | 3 (17.65)                       | 5 (29.41)                     | 2 (11.76)                       | 1 (5.88)                             | 2 (11.76)       |
| 4. I can easily understand how my recipients feel about things       | 4 (23.53)           | 6 (35.29)                     | 3 (17.65)                       | 2 (11.76)                     | -                               | 1 (5.88)                             | 1 (5.88)       |
| 5. I feel I treat some recipients as if they were impersonal objects | —                   | —                             | 1 (5.88)                        | 1 (5.88)                      | 2 (11.76)                       | 1 (5.88)                             | 12 (70.59)      |
| 6. Working with people all day is really a strain for me             | —                   | 3 (17.65)                     | 1 (5.88)                        | 3 (17.65)                     | 2 (11.76)                       | 3 (17.65)                            | 5 (29.41)       |
| 7. I deal very effectively with the problems of my recipients        | 7 (41.18)           | 8 (47.06)                     | 2 (11.76)                       | —                             | —                               | —                     | —               |
| 8. I feel burned out from my work                                    | 1 (5.88)            | 4 (23.53)                     | 3 (17.65)                       | 2 (11.76)                     | 2 (11.76)                       | 4 (23.53)                            | 1 (5.88)       |
| 9. I feel I'm positively influencing other people's lives through my work | 10 (58.82)          | 4 (23.53)                     | 1 (5.88)                        | 1 (5.88)                      | —                               | 1 (5.88)                             | —               |
| 10. I've become more callous toward people since I took this job      | —                   | 2 (11.76)                     | 1 (5.88)                        | 2 (11.76)                     | 1 (5.88)                       | 2 (11.76)                            | 9 (52.94)       |
| 11. I worry that this job is hardening me emotionally                 | —                   | 2 (11.76)                     | 1 (5.88)                        | 1 (5.88)                      | 3 (17.65)                       | 2 (11.76)                            | 8 (47.06)       |
| 12. I feel very energetic                                           | 3 (17.65)           | 4 (23.53)                     | 7 (41.18)                       | 2 (11.76)                     | 1 (5.88)                       | —                                   | —               |
| 13. I feel frustrated by my job                                      | 3 (17.65)           | 4 (23.53)                     | 1 (5.88)                        | 2 (11.76)                     | 3 (17.65)                       | 4 (23.53)                            | —               |
| 14. I feel I'm working too hard on my job                            | —                   | 1 (5.88)                      | 1 (5.88)                        | 5 (29.41)                     | 2 (11.76)                       | 5 (29.41)                            | 3 (17.65)       |
| 15. I don't really care what happens to some recipients              | —                   | —                             | 1 (5.88)                        | 2 (11.76)                     | —                               | 5 (29.41)                            | 9 (52.94)       |
| 16. Working directly with people puts too much stress on me          | —                   | 1 (5.88)                      | —                               | 2 (11.76)                     | 1 (5.88)                       | 6 (35.29)                            | 7 (41.18)       |
| 17. I can easily create a relaxed atmosphere with my recipients     | 6 (35.29)           | 5 (29.41)                     | 5 (29.41)                       | 1 (5.88)                      | —                               | —                                   | —               |
| 18. I feel exhilarated after working closely with my patients        | 10 (58.82)          | 4 (23.53)                     | 3 (17.65)                       | —                             | —                               | —                                   | —               |
| 19. I have accomplished many worthwhile things in this job           | 8 (47.06)           | 4 (23.53)                     | 4 (23.53)                       | —                             | 1 (5.88)                       | —                                   | —               |
| 20. I feel like I'm at the end of my rope                            | —                   | 1 (5.88)                      | —                               | 4 (23.53)                     | 2 (11.76)                       | —                                   | 10 (58.82)      |
| 21. In my work, I deal with emotional problems very calmly           | 7 (41.18)           | 3 (17.65)                     | 3 (17.65)                       | 3 (17.65)                     | —                               | 1 (5.88)                             | —               |
| 22. I feel recipients blame me for some of their problems            | —                   | —                             | 3 (17.65)                       | 2 (11.76)                     | 3 (17.65)                       | 3 (17.65)                            | 6 (35.29)       |

**Conclusion**

COVID-19 pandemic had overwhelmed the Thai healthcare system, disrupted routine hospital services, and caused significant impacts on the medical education system, including otolaryngology residency training programs. It caused a perception of skill and knowledge reduction among residents, which leads to the unconfident of trainees in practice of OPD.
services and surgical cases. And also caused the burnout syndrome in all aspects including EE, DP, and decreased sense of PA.

Acknowledgements
The authors are grateful to Kanit Bunnag for advice and to Siraya Sammawart for permission to use the Thai version of Maslach burnout inventory in the study.

Author contributions
KB, AT, and PW helped in conceptualization. KB, SJ, KJ, GU, and AK help in methodology. KB and AT helped in formal analysis. KB helped in writing original draft. KB, PW, and AT helped in writing review and editing.

Declaration of conflicting interests
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethics approval
Ethical approval for this study was obtained from the institutional review board of Vajira Hospital, Navamindradhiraj University.

Funding
The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the Navamindradhiraj University Research Fund [grant number 105/2564].

Informed consent
Written informed consent was obtained from all subjects before the study.

Table 7. Experience of burnout syndrome.

|                      | Total (n = 17) | Male (n = 6) | Female (n = 11) | p-Value |
|----------------------|---------------|-------------|----------------|---------|
|                      | n (%)         | n (%)       | n (%)          |         |
| Emotional exhaustion |               |             |                |         |
| Low (0–16)           | 2 (11.76)     | 1 (16.67)   | 1 (9.09)       | 1.000   |
| Moderate (17–26)     | 4 (23.53)     | 1 (16.67)   | 3 (27.27)      |         |
| High (27 +++)        | 11 (64.71)    | 4 (66.67)   | 7 (63.64)      |         |
| Mean ± SD (min–max)  | 32.94 ± 12.00 (11–52) | 29.67 ± 11.02 (11–40) | 34.73 ± 12.64 (15–52) | 0.424   |
| Depersonalization    |               |             |                |         |
| Low (0–6)            | —             | —           | —              | 0.353   |
| Moderate (7–12)      | 1 (5.88)      | 1 (16.67)   | —              |         |
| High (13 +++)        | 16 (94.12)    | 5 (83.33)   | 11 (100.00)    |         |
| Mean ± SD (min–max)  | 23.94 ± 6.49 (9–30) | 23.00 ± 8.15 (9–30) | 24.45 ± 5.79 (13–30) | 0.673   |
| Personal fulfillment |               |             |                | NA      |
| Low (39 +++)         | —             | —           | —              |         |
| Moderate (32–38)     | —             | —           | —              |         |
| High (0–31)          | 17 (100.00)   | 6 (100.00)  | 11 (100.00)    |         |
| Mean ± SD (min–max)  | 8.88 ± 5.22 (0–21) | 11.33 ± 5.16 (7–21) | 7.55 ± 4.97 (0–17) | 0.159   |

Fischer’s exact test. Independent t-test. SD: standard deviation. *Significant if p < 0.05.

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Supplemental material
Supplemental material for this article is available online.

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