

## Impact of Ethical Communication Interventions on Healthcare Practice: Evidence from a Cluster Randomized Controlled Trial

Grace Y. Tan<sup>1</sup>, Daniel Ho<sup>1</sup>, Rachel Koh<sup>2\*</sup>

<sup>1</sup>Department of Medical Humanities and Ethics, School of Medicine, National University of Singapore, Singapore.

<sup>2</sup>Department of Bioethics, Faculty of Medicine, University of Hong Kong, Hong Kong, China.

\*E-mail ✉ [rachel.koh@gmail.com](mailto:rachel.koh@gmail.com)

### Abstract

Studies show that healthcare workers often encounter complex ethical dilemmas in their everyday practice, underscoring the need for organized interprofessional dialogue. Ethics communication in groups (ECG), which is based on Jürgen Habermas's theory of communicative action, offers a structured approach to foster joint reflection on moral concerns. The "one to five method" is a hands-on technique designed for clinicians who have received ethics training, allowing them to lead ECG sessions seamlessly within regular clinical workflows. The aim is to assess how structured ethics communication in groups (ECG), utilizing the 'one to five' method, impacts healthcare professionals' experiences of moral distress and perceptions of the ethical climate in 24-hour care wards, compared to a control group. The study was a forward-looking, cluster-randomized trial conducted with an open-label, non-blinded design. Nine departments representing various medical specialties within a single university hospital were deliberately selected and subsequently randomized into an intervention arm (five wards) and a control arm (four wards). In the intervention arm, structured Group-based Ethics Communication (ECG) sessions using the 'one to five' method were conducted once a month over a six-month period. Outcome measurements were collected prospectively at three months and six months post-baseline with the Measure of Moral Distress for Healthcare Professionals (MMD-HP), the Moral Distress Thermometer (MDT), and the Swedish version of the Ethical Climate Questionnaire (SwECQ). Between-group comparisons revealed no statistically significant differences in overall moral distress across the study period. However, within-group analysis indicated that, at the 3-month follow-up, the intervention group reported significantly lower moral distress related to patient-level clinical situations compared to baseline, although this reduction was not sustained and returned to control-group levels by the 6-month assessment. In contrast, perceived ethical climate was consistently rated higher in the intervention group at both the 3-month and 6-month follow-up points. Engaging in ethics communication in groups (ECG) appears to promote common values and improve the ethical climate, even though it did not lead to significant changes in levels of moral distress. Moral distress may continue despite such interventions, but opportunities for open discussion and professional development can help build moral resilience. The study demonstrated a positive association between participation in ECG using the 'one to five method' and a supportive ethical climate. However, the small number of participants limited the ability to detect statistically significant effects. Future studies should involve larger, multicenter samples and incorporate qualitative approaches to better understand experiences with ECG.

**Keywords:** Ethical communication, Healthcare, Controlled trial, Moral Distress Thermometer (MDT)

### Introduction

Healthcare professionals regularly encounter complex ethical challenges in daily clinical practice, making it essential to have structured ways to reflect on and discuss these situations [1, 2]. Clinical Ethics Support (CES) is widely implemented across healthcare systems worldwide, though its structure, purpose, and theoretical

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framework vary from setting to setting [3]. CES generally provides a platform for discussion and decision-making around ethical issues, involving multiple professional perspectives at both organizational and clinical levels [4].

There are several approaches to CES, including clinical ethics committees (CECs) [5, 6], ethics consultations [3, 7], moral case deliberation (MCD) [8], ethics rounds [9], case reflections [10], and ethics communication in groups (ECG) [11]. CECs serve as overarching structures offering guidance, education, and support to manage ethical issues, while ethics consultations focus on assisting staff and patients in resolving specific dilemmas [3, 7]. Although both may provide advice, their central role is to encourage reflection and moral dialogue [3].

Moral case deliberation involves structured discussions of ethical challenges using methods such as Socratic questioning, dialogical exploration, and practical reasoning, often led by trained facilitators [8, 12, 13]. Ethics rounds, meanwhile, promote interprofessional dialogue through creative and reflective approaches [9]. ECG, rooted in Habermas's theory of communicative action, specifically aims to help professionals from different disciplines achieve a shared understanding of ethically difficult situations [11].

Research has shown that CES interventions can positively impact healthcare practice. Hem *et al.* [14] found that participation in ethics reflection groups increased professionals' analytical thinking regarding ethical issues. In a mixed-methods study, community healthcare staff reported improved care quality, stronger collegial support, and personal growth following ethics reflection activities [15]. Similarly, Weidema *et al.* [16] found that MCD encouraged critical thinking, awareness of multiple perspectives, and better cooperation among staff. Frank *et al.* [17] observed that ambulance service professionals gained insight and self-awareness from ethics rounds, and McClimans *et al.* [18] identified education, mediation, improved decision-making, and actionable outcomes as key priorities in CES.

Observational studies of ECG highlight its ability to foster shared understanding. Grönlund *et al.* [19] noted that participants transitioned from individual frustration to collective comprehension of ethical challenges. Brännström *et al.* [20] described ECG as an "ethical free zone" where professionals could engage authentically as

both practitioners and human beings. Wälivaara *et al.* [21] emphasized that ECG offers a forum for deep discussion, enhancing ethical awareness and generating new perspectives.

The 'one to five method,' developed by Fischer-Grönlund *et al.* [11], is intended to guide ethically trained healthcare professionals in conducting ECG sessions in routine practice. It is based on previous observational studies and Habermas's theory of communicative action [20, 22]. According to Habermas [23], communicative action requires open, sincere, and equal participation, where individuals share ideas, assumptions, and arguments to reach a common understanding and agreement on values. Discussion continues until consensus or mutual comprehension is achieved.

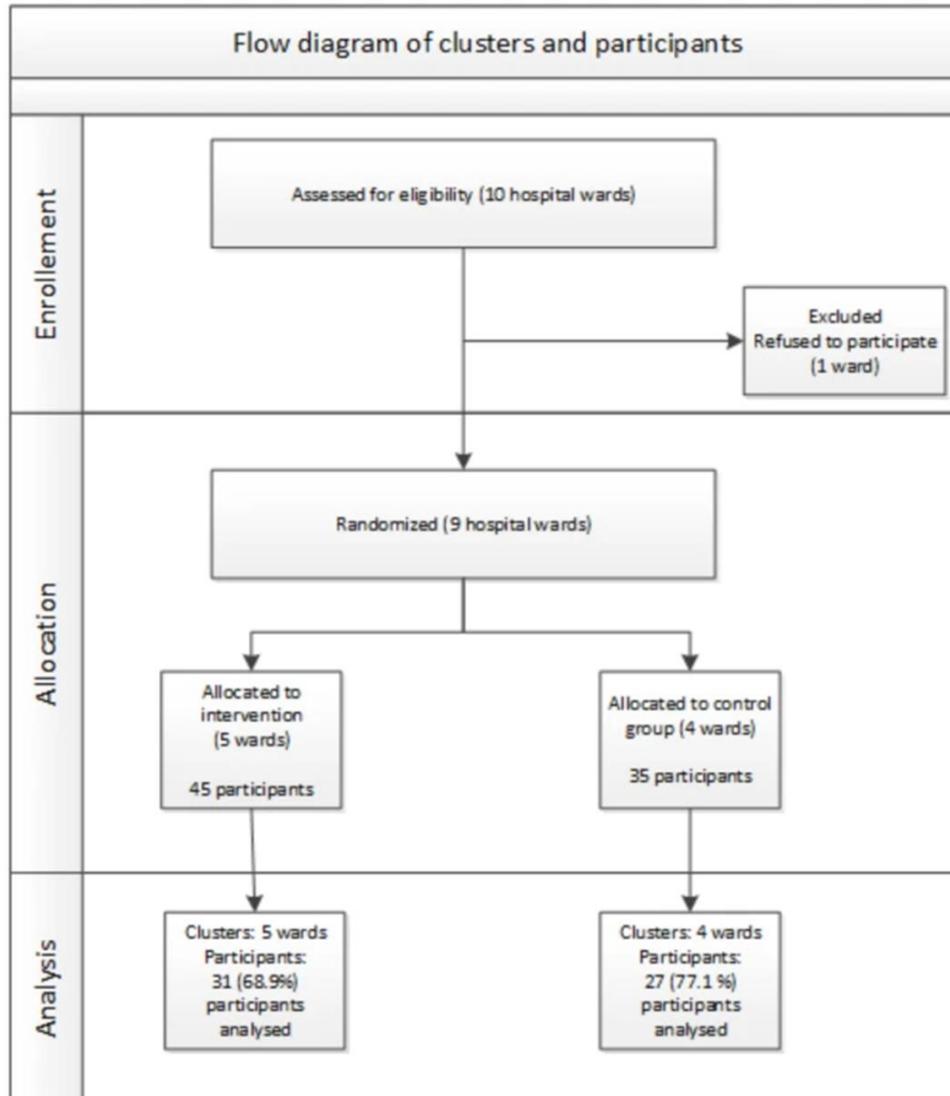
Moral distress is a frequent experience among healthcare staff [24, 25], defined by Jameton [26] as frustration, guilt, or anger arising when professionals are unable to act according to their ethical values. Hamric [27] described it as a compromise of one's moral integrity. Evidence suggests that a positive ethical climate can mitigate moral distress and reduce intentions to leave the profession [28–31]. Ethical climate encompasses shared organizational values, norms, and practices that influence how ethical issues are approached [32, 33], and in healthcare, it includes mutual respect, shared decision-making, and ethical collaboration among staff, management, and patients [34].

Despite its potential, the 'one to five method' has been minimally evaluated in practice. This study aimed to examine how structured ethics communication in groups using this method affects healthcare professionals' moral distress and perceptions of the ethical climate in hospital wards providing round-the-clock care, compared to a control group.

## Materials and Methods

### *Study design and setting*

The study employed a prospective cluster-randomized design with an open, non-blinded approach and was conducted between September 2021 and May 2022. Hospital wards were first selected intentionally and then randomly assigned to either the intervention group or the control group (**Figure 1**).



**Figure 1.** Flow diagram of clusters and participants

#### *Randomisation*

Out of 105 questionnaires distributed, 89 were returned either fully or partially completed, and 80 of these were filled out in their entirety. Longitudinal data collection took place at baseline and at the 3-month and 6-month follow-up points, with 58 participants providing complete responses across all three measurement occasions.

Immediately following completion of the baseline questionnaires, an independent individual (unaffiliated with the study) performed the randomization, assigning wards to either the intervention arm (5 wards) or the control arm (4 wards). The intervention wards comprised units specializing in psychogeriatric care, thoracic intensive care, neuro-rehabilitation for traumatic

neurological injuries, neuro-rehabilitation for progressive neurological disorders, and infectious diseases. The control wards included units focused on general geriatric care, general intensive care, emergency medicine, and palliative care.

#### *Inclusion criteria and participants*

Eligibility for inclusion in the study required wards that operated 24-hour care and employed designated healthcare staff appointed by hospital leadership to serve as “ethical ambassadors” responsible for providing ethics-related support. These ethical ambassadors were required to have completed a foundational clinical ethics training program offered by the regional health authority between September 2020 and January 2021. Ten wards

satisfied these criteria and were approached for participation; nine ultimately agreed to take part. Staff members from diverse professional backgrounds—including registered nurses, assistant nurses, physicians, physiotherapists, occupational therapists, counsellors, and ward clerks—were invited to join the study either directly by the ethical ambassadors or by the respective ward managers.

### *Intervention*

The ‘one to five method’ is a structured five-step approach designed to support interprofessional ethics communication in groups (ECG). The first step involves narrating the situation, allowing participants to freely share their experiences and describe the context in their own words. In the second step, participants reflect on the emotions that the situation evokes. The third step focuses on clearly defining the ethical problem or dilemma, enabling participants to identify value conflicts and articulate the ethical dimensions. During the fourth step, participants analyze the situation by exchanging perspectives and exploring different viewpoints to develop a broader understanding. The final step involves considering potential courses of action, grounded in well-reasoned arguments [11, 35].

In the intervention group (IG), seven healthcare professionals served as “ethical representatives” for their wards and underwent training in facilitating ECG using the ‘one to five method.’ This training combined both theoretical instruction and practical exercises. The half-day program introduced the theoretical framework of the method and provided participants with hands-on experience in facilitating ECG sessions.

Following the training, the ethical representatives led monthly ECG sessions for six months within their wards. Each session, lasting approximately one hour and attended by three to twelve participants, focused on ethical challenges encountered in the participants’ daily clinical work. Facilitators guided the discussion using the ‘one to five method,’ helping participants identify the ethical dilemma, articulate the value conflicts, and select the specific situation to address. Sessions were held in separate rooms, and the insights and decisions from each meeting were intended to be communicated back to the wider professional team. Although monthly feedback meetings for facilitators were offered, only two were held due to staffing constraints.

In the control group (CG), ethical representatives only participated in the standard ethics education provided by

the regional healthcare program. They did not receive the specific training in the ‘one to five method,’ did not facilitate ECG sessions, and clinical staff from these wards ( $n = 4$ ) did not engage in any ECG activities.

### *Instruments and outcomes*

Longitudinal measurements were taken at the start of the study and again at three and six months (right before the initial ECG session and immediately following the third and final sessions). The assessment tools included the Swedish version of the Measure of Moral Distress for Healthcare Professionals (MMD-HP), the Moral Distress Thermometer (MDT), and the Swedish Ethical Climate Questionnaire (SwECQ). Background information on age, profession, and work experience was collected only at the initial time point using a custom-designed questionnaire.

The MMD-HP (Epstein *et al.* [36], Swedish adaptation [37, 38]) is a 27-item scale that captures common sources of ethical conflict in clinical settings. For each scenario, respondents indicate both how often it happens (0 = never to 4 = very often) and how upsetting it feels (0 = not upsetting to 4 = extremely upsetting). A combined item score (0–16) is created by multiplying the two ratings, and the overall score (0–432) is the sum of all items—higher values reflect more intense and frequent moral distress. Two extra questions explore whether moral distress has led (or might lead) the person to quit their job.

The MDT (Wocial & Weaver [39], Swedish version [40]) is a quick, one-question visual scale from 0 (no distress at all) to 10 (worst imaginable distress), with verbal descriptors every two points (none → mild → uncomfortable → distressing → intense → worst possible). Participants mark the level that best matched their experience over the previous fortnight.

The SwECQ [41] is a 10-item, single-dimension tool inspired by Habermas’s ideas about open democratic discourse. Responses are given on a 6-point scale from 1 (“not at all”) to 6 (“very much”). The total score is derived by adding items 1–9 and the reverse-scored item 10; higher scores signal a healthier ethical environment and more open ethical dialogue on the ward. The scale has shown excellent psychometric properties in Swedish settings.

### *Statistical analyses*

To achieve 80% statistical power with a significance level set at  $P < 0.05$  and an expected dropout rate of 20%,

it was initially calculated that 35 participants per group (70 in total) were needed. To accommodate potential attrition, the sample size was increased to 42 participants in each group, resulting in a total of 84 participants. Descriptive statistics were used to summarize the characteristics of the participants (**Table 1**). Differences between the intervention and control groups were

analyzed using Repeated Measures ANOVA. The assumption of sphericity was tested with Mauchly's W, and when necessary, adjustments were made using either the Huynh-Feldt or Greenhouse-Geisser correction. Statistical significance was defined as a p-value less than 0.05. All analyses were carried out using Jamovi version 2.3.18.

**Table 1.** Description of participants included in the analysis

Characteristic	Total (N=58)	Intervention Group (n=31)	Control Group (n=27)	p-value
<b>Sex, n (%)</b>				0.330
Female	50 (86%)	28 (90%)	22 (81%)	
Male	8 (14%)	3 (10%)	5 (19%)	
<b>Age (years), n (%)</b>				0.493
21–30	10 (17%)	4 (13%)	6 (22%)	
31–40	9 (16%)	7 (23%)	2 (7%)	
41–50	14 (24%)	8 (26%)	6 (22%)	
51–60	18 (31%)	8 (26%)	10 (37%)	
61 or older	7 (12%)	4 (13%)	3 (11%)	
<b>Occupation, n (%)</b>				0.170
Assistant nurse	15 (26%)	11 (37%)	4 (15%)	
Registered nurse	25 (44%)	11 (37%)	14 (52%)	
Physician	7 (12%)	2 (7%)	5 (19%)	
Other	11 (19%)	6 (20%)	4 (15%)	
<b>Years of professional experience in healthcare (mean ± SD)</b>	18.60 ± 12.44	18.00 ± 13.86	19.26 ± 10.87	0.575
<b>Years of experience at current workplace (mean ± SD)</b>	9.91 ± 9.26	10.19 ± 9.87	9.59 ± 8.67	0.808

## Results and Discussion

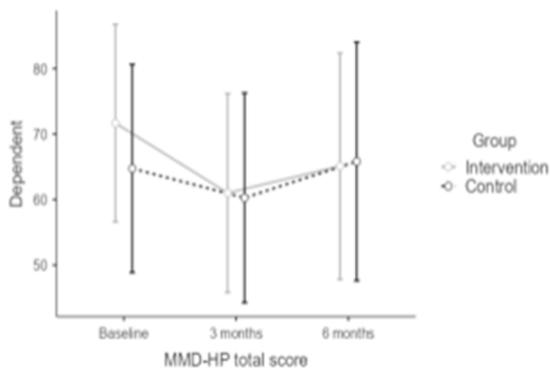
The analysis revealed no significant changes over time within either group for the measured variables. However, differences between the intervention and control groups were observed for factor 2, which relates to clinical causes at the patient level, and for the Swedish Ethical Climate Questionnaire (SwECQ) scores. For factor 2, the intervention group showed lower scores at the three-month assessment but returned to levels comparable with

the control group by six months. In terms of ethical climate, participants in the intervention group reported higher ratings at both three and six months, although the increase at six months did not reach full statistical significance. Nevertheless, there was a clear tendency for the intervention group to perceive an improving ethical climate over the course of the intervention. No additional significant differences were identified (**Table 2; Figure 2**).

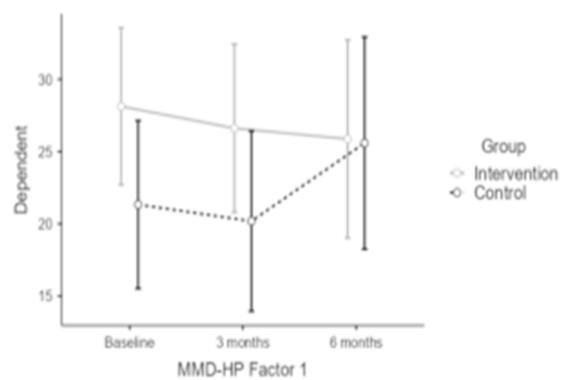
**Table 2.** Description of the intervention's effect. Intervention, n = 31, control, n = 27

Outcome Measure	Group	Baseline Mean (SD)	3 Months Mean (SD)	6 Months Mean (SD)	p-value Within-group	p-value Between-group	p-value Baseline vs. 6 Months (between-group)	Effect Size (d)
<b>MMD-HP Total Score</b> (range 0–432)	Intervention	71.67 (43.69)	61.00 (40.17)	66.94 (49.83)	0.315	0.699	—	-0.14
	Control	64.74 (38.19)	60.26 (42.94)	65.81 (44.36)				

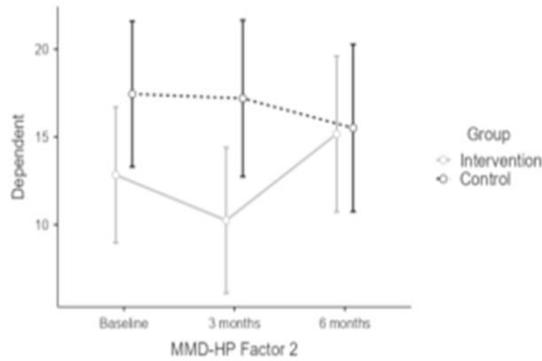
<b>MMD-HP System-level</b> (range 0–128)	Intervention	28.13 (16.31)	26.61 (16.39)	25.87 (18.93)	0.491	0.203	—	−0.13
	Control	21.33 (13.52)	20.19 (15.92)	25.59 (19.16)			0.156	0.25
<b>MMD-HP Patient-level (Clinical causes)</b> (range 0–96)	Intervention	13.10 (9.40)	10.23 (9.91)	15.35 (13.57)	0.253	0.040	—	0.19
	Control	17.15 (11.44)	17.22 (13.15)	15.30 (10.27)			0.328	−0.17
<b>MMD-HP Perceived integrity related to colleagues</b> (range 0–112)	Intervention	12.30 (15.23)	9.50 (8.89)	10.29 (11.31)	0.513	0.546	—	−0.18
	Control	8.41 (7.20)	7.74 (7.65)	9.19 (9.02)			0.600	0.09
<b>MMD-HP Interactions with patients and families</b> (range 0–96)	Intervention	16.97 (12.32)	15.68 (12.96)	16.81 (14.16)	0.381	0.823	—	−0.01
	Control	17.85 (14.32)	15.11 (13.92)	16.04 (13.09)			0.218	−0.13
<b>Moral Distress Thermometer</b> (range 0–10)	Intervention	2.19 (2.33)	2.45 (2.35)	2.90 (2.57)	0.552	0.537	—	0.29
	Control	3.33 (2.91)	2.44 (2.56)	2.74 (2.41)			0.295	−0.22
<b>Ethical Climate</b> (range 0–60)	Intervention	41.00 (11.64)	43.32 (9.58)	43.87 (9.15)	0.859	0.036	—	0.27
	Control	39.15 (6.84)	36.26 (7.68)	36.81 (11.32)			0.184	−0.25



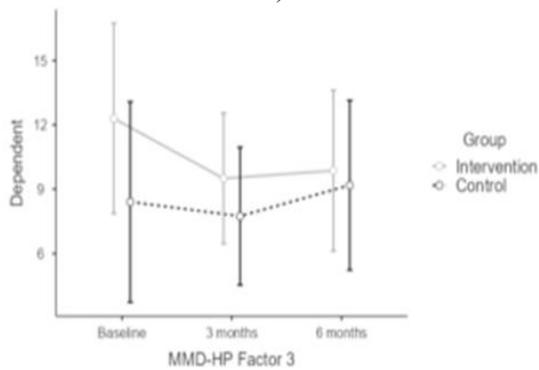
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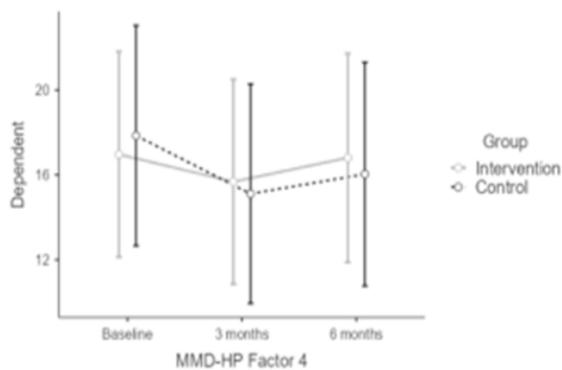
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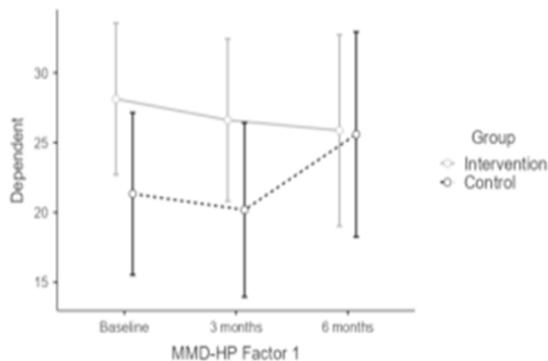
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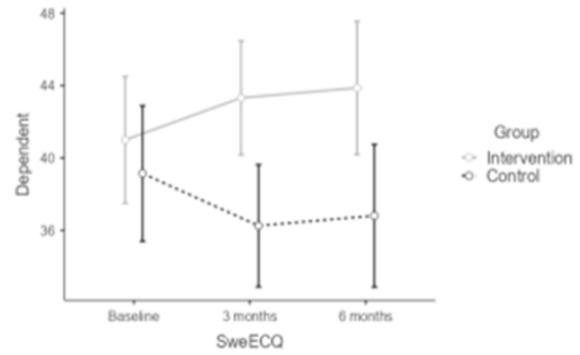
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f)



g)

**Figure 2.** Description of the most significant effects of the intervention

The primary outcome of this study indicated a tendency for the intervention group to perceive an improved ethical climate at both the three- and six-month assessments. In contrast, no substantial changes were observed in participants' moral distress over time, which may be partly explained by the relatively low baseline levels of moral distress.

These findings suggest that participation in ethics communication in groups (ECG) and the exchange of perspectives among colleagues can have a positive influence on the workplace ethical climate. Similar outcomes have been reported by Okumoto *et al.* [42], who observed enhanced ethical climate following structured ethics education and training. However, not all interventions yield the same effect; for instance, Silén *et al.* [43] found that ethics rounds did not significantly alter the ethical climate. Research by Lützen *et al.* [44] indicates that both the organizational ethical climate and an individual's moral sensitivity may shape the intensity of moral distress experienced by healthcare professionals.

Despite these effects on the ethical climate, the intervention did not result in measurable reductions in moral distress at the six-month follow-up. Prior studies examining strategies to mitigate moral distress have produced mixed results. Interventions that combine empowerment, education, and open dialogue have been associated with reductions in moral distress [45–47], whereas programs such as moral distress consultation services (MDC) appear to have limited impact [48]. In some cases, educational interventions have even produced temporary increases in reported moral distress, as observed by Leggett *et al.* [49].

Our results are in line with previous research suggesting that interventions encouraging ethical reflection and dialogue may strengthen perceptions of the ethical climate even if they do not directly reduce moral distress. For example, Ashida *et al.* [50] reported improvements in moral competence following ethics support programs despite no significant decrease in moral distress. Epstein *et al.* [48] emphasize that while ethics consultations may not immediately relieve moral distress, they can help professionals identify strategies for navigating ethically challenging situations. Lützn and Ewalds-Kvist [51] highlight that moral sensitivity can provoke moral distress when individuals are unable to act in accordance with their values, but interprofessional dialogue can foster understanding and create conditions that support moral resilience.

The present study supports this notion: although moral distress levels remained stable, participants in the intervention group reported a more positive ethical climate, which may contribute to resilience development. Similarly, Coremans *et al.* [52] demonstrated that encountering moral distress within a supportive ethical climate, combined with open dialogue, facilitates shared understanding, professional learning, and resilience. In this context, ECG provides a structured environment for collective reflection, enabling staff to explore strategies for managing ethical challenges even when reductions in moral distress are not apparent. Young and Rushton [53] propose a more balanced understanding of moral distress, viewing it as an opportunity for personal and professional growth. This perspective aligns with our findings, suggesting that open dialogue and reflective practice within ECG may strengthen healthcare professionals' capacity to cope with ethically demanding situations.

It is also noteworthy that this study was conducted during the COVID-19 pandemic, a period marked by widespread ethically complex clinical scenarios. During the intervention, participants in the intervention group reported slightly lower moral distress at three months, while control group participants experienced an increase, suggesting that ECG may have offered some protective effect during particularly challenging times.

Prior studies have highlighted the role of ECG in providing healthcare professionals with opportunities to approach ethical challenges from multiple perspectives and work toward a shared understanding [19, 21]. The 'one to five method' used in this study draws on Habermas' theory of communicative action, which emphasizes the importance of the lifeworld—personal

experiences, values, norms, and attitudes—in shaping understanding [54]. Through dialogue, participants can share perspectives and collectively develop knowledge and interpretation of ethical situations [54]. Benhabib [55] describes communicative ethics as a process in which individuals with differing values engage in reasoned debate, fostering moral reflexivity and opening the way to shared ethical ideals [55].

Although no changes in moral distress were observed within or between groups, participation in ECG was associated with improved perceptions of the ethical climate. This suggests that structured ethical dialogue can enhance collective moral awareness and shared understanding of values, which may, in turn, support the development of moral resilience among healthcare professionals.

#### *Methodological considerations*

The study involved a limited number of participants, which prevented achieving full statistical power, so the results should be interpreted cautiously. Both the intervention and data collection took place during the COVID-19 pandemic, a period that introduced new ethical pressures and challenges for healthcare workers that may have shaped their experiences of moral distress. Some wards were temporarily repurposed for COVID-19 care, while others cared for critically ill patients who typically would not be treated in those units. As noted by Dunham *et al.* [56], the pandemic created ethical conflicts where healthcare professionals had to balance public health demands with individual patient care, often working outside their usual scope with scarce resources. Similarly, Spilg *et al.* [57] observed that caring for COVID-19 patients led to higher levels of moral distress. These stressful circumstances likely contributed to both the low and declining survey response rates and the fact that levels of moral distress remained largely unchanged at the 3- and 6-month follow-ups. Although the intervention appeared to improve the ethical climate, these findings should be interpreted cautiously due to the small number of participants.

Visitor restrictions during the pandemic made it difficult for researchers to communicate with staff, obtain responses, or send reminders, which may also explain the low participation rate. Questionnaire completion varied: most participants answered the MDT and SwECQ, but many MMD-HP surveys were incomplete and therefore excluded. Completing the MMD-HP demands considerable time and focus, which may have been

challenging in high-pressure clinical settings during the pandemic.

One strength of the study was that facilitators were healthcare professionals acting as “ethical representatives,” ensuring minimal direct influence from the research team. However, the intervention period was relatively short, which may not have been sufficient to detect meaningful changes in moral distress. Larger, multicenter studies are needed to better understand how structured interprofessional ethics discussions might affect moral competence among healthcare staff.

### Conclusion

This study indicates that healthcare professionals’ engagement in structured group discussions on ethical issues (ECG), facilitated on the wards by designated ethical representatives through the “one to five method,” is associated with a more favorable perception of the ethical environment. Such group discussions may promote a common understanding of ethical principles and help staff align their values, thereby supporting a more positive moral climate. Despite this, no measurable differences were found between participants and non-participants, and moral distress levels did not show any meaningful change over time. It is possible that participating in these discussions heightens awareness of ethical conflicts, which might contribute to the persistence of moral distress.

The limited number of participants in this study prevented robust statistical conclusions, highlighting the need for larger-scale research. Future studies should involve multiple centers and a greater sample size to better evaluate how ECG affects moral distress. In addition, it would be valuable to examine the influence of healthcare professionals’ moral skills and resilience on these outcomes. Qualitative research could also provide in-depth insight into the experiences of both participants and facilitators, particularly regarding the practical implementation and perceived effects of the “one to five method.”

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**Ethics Statement:** The study was performed according to the Helsinki Declaration (2013). All participants gave informed consent to participate after receiving oral and written information about the study. The participants were informed that their participation was voluntary and that they could interrupt whenever they wanted to without any consequences. The Swedish Ethics Review Authority approved the study (dnr 2020–04120).

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