The Effects of Blended and Online-only Methods of Mentorship Training on Mentor Competence in Two Hospital Districts – A Quasi-experimental Study

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Summary. *This study compared the effects of blended and online-only methods of mentorship training on the competence of mentors of healthcare students.*

Background. Mentors in healthcare professions have a major impact on quality nursing education during clinical practice, and mentorship training is one means of improving mentors' understanding high-quality education.

Method. This was a quasi-experimental study involving non-randomized, pre- and post-intervention measurements. Training comprised a blended method for the intervention group (n = 192) and an online-only method for the control group (n = 64) in two Finnish hospital districts.

Results. Mentors' competence improved after training, and all but one area of mentorship competence (reflection during mentoring) showed a statistically significant difference. The blended training produced larger mean differences than the online-only training in the competence areas requiring mentor–student interaction.

Conclusion. Both training methods increased mentorship competence. Healthcare organizations must seriously consider implementing mentorship competence training using methods that are effective and facilitate more efficient allocation of limited available resources.

Introduction

During clinical practice, healthcare students are mentored by healthcare professionals to support students' professional growth (1, 2). Mentorship occurs alongside patient work and includes constant interaction, between mentor and student, intended to facilitate learning and knowledge-sharing (3). Student mentorship significantly affects the students' learning process, and high-quality mentorship supports students' holistic professional development (1). Mentors feel that they need training to provide high-quality mentorship (4), despite the lack of compulsory mentorship training in many countries (5). Healthcare institutions should assure mentorship competence of their healthcare professionals by providing the appropriate training (6).

In previous studies, both students and mentors expressed the need for mentorship training (1, 7), and the effects of mentorship competence training have been positive. Training increases mentors' understanding of the mentoring process (4, 8) and improves students' learning outcomes (9, 1). Recent studies focus on content organization and the effectiveness of mentorship training (10–12).

According to Nowell et al. (10), comparisons of mentorship competence training programs are difficult to conduct, and the clearest, most effective training program is yet to be identified. The current body of literature lacks comparisons of mentorship training methods and examinations of improvement in mentors' competence after training. However, this information is useful for ensuring efficient resource allocation at healthcare institutions. This study aims to compare the effects of blended (combined in-person and online) and online-only methods of mentorship competence training for mentors of healthcare students.

In nursing education, students are given opportunities to learn and practice their working skills in a genuine work environment. Directive 2005/36/EU of the European Parliament and of the Council (13) requires institutions of higher education in healthcare to offer students work-related learning environments where they can practi-ce the skills of their future profession. Students must be allowed

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to combine theory with practice in real multi-professional environments in contact with real patients. Internationally, a bachelor's degree in nursing typically takes three and a half years to attain, with half of this duration requiring practical education in the clinic (14, 15).

During clinical practice, the learning process for students of nursing and other healthcare professions is supported by a didactic teacher at the higher education institution (16) and by nurse or healthcare professionals acting as mentors at the workplace (7). Before clinical practice, a student must learn the required nursing or healthcare skills in classes taught by teachers. The teacher ensures that the student acquires the right professional skills for the relevant clinical practice (16, 17). During clinical practice, the mentor supports the student in patient care by observing the student's stage of education (1, 3, 9), and by presenting genuine patient work to the student. Both the teacher and the mentor support advancement of the student towards the set learning goals (16). However, mentoring occurs alongside patient work; therefore, evaluation of mentorship quality is a challenge (1).

Various terms are used in reference to mentors, including: *supervising nurses* (15); *preceptors* (3); and *mentors* (9). Previous systematic reviews report that the term *mentor* has been widely and commonly used in several studies (5, 11). During clinical practice, student and mentor interact with each other constantly. If this interaction and the overall mentoring relationship is a positive experience, the student's knowledge and satisfaction increase considerably (1). A positive environment encourages students to rely on their mentor, leading to greater exposure to the mentor's experiences during mentorship interactions (6, 18). Nurse management has the critical responsibility of supporting mentors by fostering a positive learning environment and by helping mentors to do their job while mentoring students (3, 6).

Mentors must be competent at mentorship to achieve growth in positive student professionalism. Mentorship competence involves, for example, preparing for mentoring activities in advance (19); accounting for students' individual backgrounds (9); supporting students' individual learning processes (11) providing appropriate learning situations (6); identifying students' capabilities (3); giving constructive feedback (1); conducting student-centered evaluations (8); and encouraging and facilitating professional development (4). Several studies demonstrate that mentors lacked basic pedagogical tools to enable student-centered guidance and support during clinical practice (6, 9). According to Ford et al. (15), students believe that the mentor's mission is to lead and organize suitable learning opportunities, while mentors believe that students are responsible for proper learning.

Mentors require adequate professional skills as well as mentorship competence to mentor nursing students (6). In previous studies, mentors expressed the need for more mentorship training, and mentors who completed such training believed it led to improvement in their mentorship competence (4, 8). After training, mentors: more clearly comprehended the different components of student mentorship practices; better understood how to respond to students' learning needs; and were better able to evaluate students' ability to learn (4, 8). Browning et al. previously showed that mentorship training improved mentors' confidence in their role (19).

Mentorship training observed in previous studies was implemented through various teaching methods to improve its effectiveness. The combination of in-person and online teaching is the most popular mentorship training method (10, 20). Later studies showed that online education commonly supplemented traditional teaching methods (21). Online learning encourages mentors to participate in training due to implicit flexibility in scheduling and location of the training (12, 21). In-person teaching allows for face-to-face discussions with trainers and peers (23). Existing evidence demonstrates that both methods lead to positive learning outcomes for mentors (12, 20, 24). When asked, mentors expressed greater satisfaction with the blended method than with the online-only method (25, 26). A direct comparison of the two training methods has not yet been published in the literature and poses a challenge due to several variations in the training (content, for example). Moreover, the clearest, most effective training program is yet to be identified (10).

Methods

The aim of the study was to compare the effects of blended mentorship training (combined in-person and online training) with those of online-only training of mentors' education upon mentors' competence in mentoring of healthcare students. The primary outcome measure was improved mentorship competence. There was no secondary outcome measurement.

More precisely, the research hypotheses were as follows:

Hypothesis 1: Blended mentorship training provides statistically significantly higher mentors' competence growth than online-only training.

Hypothesis 2: There is a statistically significant difference in improved mentors' competence when comparing pre- and post-training measurements between both groups (blended and online-only mentorship training).

Study Design. This study was quasi-experimental, non-randomized and pre- and post-intervention settlement.

Study Sample. The study population consisted of healthcare professionals working in two university hospital districts during 2013–2018 in Finland. Nurses were included in the study if they volunteered to participate in mentorship training, and if they were, or had interest in, mentoring nursing students of their clinical practice at the time. Study participants were undertaking their training in one of two groups: an intervention group, subjected to blended training (i.e. training conducted both online and in-person); and a control group, subjected to online-only training. Intervention group participants (n = 243) completed mentorship training during 2013–2017, and control group participants (n = 347) completed training during 2017–2018. Of all the participants enrolled, 192 participants from the intervention group and 64 from the control group responded to pre- and post-training measurements. Figure 1 presents the study inclusion criteria and a flow diagram representing the process of this interventional study. Part of the blended training sample has been previously reported in authors-blinded by evaluating effect of educational intervention upon the mentors' mentoring competence. However, training methods effecting the outcome remained unclear.

Data Collection. Data were collected before and after mentorship training by using questionnaires to evaluate healthcare professionals' mentoring competence. The intervention group completed one questionnaire before in-person training and another at the end of the intervention after the last teaching session in the classroom. The control group completed one questionnaire before online training and another after completing online training. Intervention group data was collected by clinical nursing teachers (mentor coordinators) in cooperation with the university and the hospital district. One member (authors-blinded) of the research team also assisted with collection of intervention group data. Control group data were collected by clinical nursing teachers of the hospital district.

Instrument. The Mentors Competence Instrument (MCI) was used in this study (2, 28), and was developed specifically to measure the competence of nurses in mentoring clinical practice nursing students. The questionnaire includes 16 background questions and 63 items organized into 10 mentoring competence categories: *mentoring practices in the workplace* (six items); *mentoring practices between student and mentor* (four items); *mentor characteristics* (seven items); *identifying the student's need for mentoring* (four items); *mentor motivation* (five items); *supporting the student's learning process* (eight items); *goal-oriented mentoring* (nine items); *reflection during mentoring* (six items); *student-centered evaluation* (10 items); and *constructive feedback* (four items). Finally, mentors were asked to evaluate their overall competence in mentoring of nursing students. Each item was scored on a four-point Likert rating scale (1 = totally disagree, 2 = disagree to some extent, 3 = agree to some extent, 4 = totally agree). Cronbach's alpha for the instrument varied between 0.78 and 0.90.

Mentorship Training Content for the Intervention and Control Groups. The mentorship training content was developed according to common planning goals of the national network of clinical nursing teachers representing five Finnish university hospitals. The mentorship training content was tailored to meet the needs of the university hospitals at that time. Table 1 summarizes the training content and implementation of the mentorship training in the hospital districts represented.

Ethical Consideration. Two university hospitals granted permission for the conduct of this study according to Finnish ethics regulations (29), and the Privacy Statement was prepared in accordance with the European Union General Data Protection Regulation (30) Participation in the study was voluntary. The research team pre-coded the study data by erasing any information that would directly identify participants. Only the necessary information was produced, and no individual participant data was reported (31.) The data was stored in protected files provided by the universities according to the regulations of the Data Protection Act.

Data Analysis. Two researchers (authors blinded) were blinded to data analysis and did not implement the intervention or collect data. Other researchers pre-coded participants' data. The unit of analysis was each participant of the intervention. IBM Statistical Package for the Social Sciences (SPSS) Software (v24.0) was used for data analysis. The data were analyzed and reported using descriptive statistics (frequencies, percentages, means and standard deviations).

Background information from the two independent groups was compared with the Pearson Chi-squared Test. A missing data test was performed using Little's Test of Missing Completely at Random (32), and if more than 5% of data was missing for a participant, that participant was excluded. The Wilcoxon Signed-Rank Test was used to evaluate the effect of mentorship training on the same participants as ascertained by the pre- and post-training measurements. The Mann-Whitney U Test was used to compare the two independent mentorship training groups. A statistical test was considered significant when the *P* value was less than 0.05 (33).
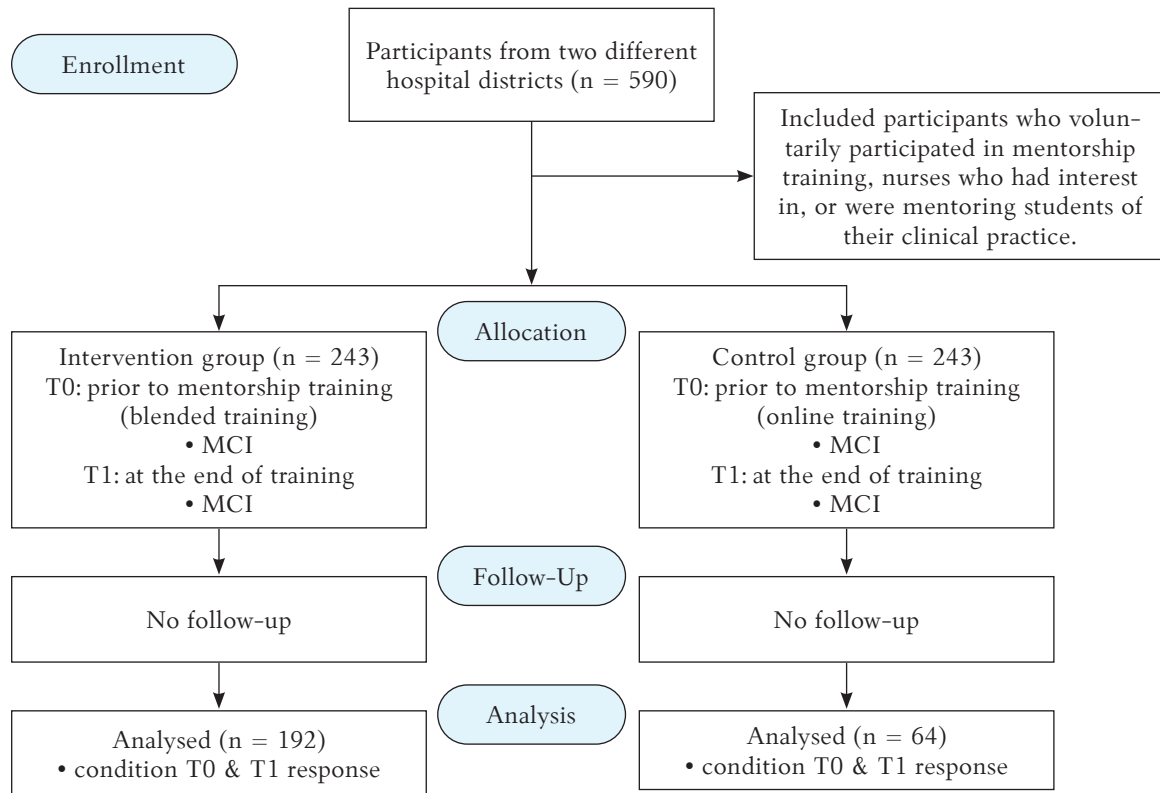
Fig. 1. CONSORT 2010 Flow diagram

Table 1. Implementation of student mentorship training in hospital districts.

	Intervention Group	Control Group
Content of mentorship training	Professional development of the mentor Mentor characteristics Supporting the student's learning process Goal-oriented mentoring Feedback and evaluation	Health care education Mentoring practice Mentors characteristics Orientation Goal-orientation and evaluation Constructive feedback Diversity of mentoring
Value of training	2 credits	2 credits
Duration	3 months	Completion according to participants' schedule
Teaching methods	Interactive, in-person, classroom teaching (8 h), online learning (36 h)	Online learning
Teachers	Clinical nursing teachers, external teachers with expertise on certain content	Clinical nursing teachers

Results

Mentors' Backgrounds. Table 2 presents participants' background information. In both groups, most participants were female; 94% and 91% in the intervention and control groups, respectively. Most participants (37%) were age 30–39 years in the intervention group, and over 50 years of age (28%) in the control group. Most participants in both groups were registered nurses (63%) and held a bachelor's degree (80%).

Statistically significant differences among the participants were identified in three background areas: work experience; time elapsed since previous student mentorship experience; and mentoring frequency. Participants in the intervention group had less work experience than those in the control group ($P < 0.01$). More participants in the intervention group (40%) had mentored a student one week prior

to the intervention, compared to the control group (34%, $P < 0.01$); one week had elapsed since most participants in both groups had mentored a student. Participants in the intervention group mentored students more frequently than those in the control group ($P = 0.02$). For example, mentorship occurred weekly (32%) for the intervention group, but monthly or yearly for the control group (34.4%).

Effects of Student Mentorship Training. Mentorship competence outcomes increased for all participants after training, as measured using the results of the pre- and post-training tests (see Table 3). The means (and standard deviations (SDs)) of mentorship competence outcomes measured by the pre-training test ranged from 2.96 (SD = 0.51), for the *student-centered evaluation* outcome, to 3.79 (SD = 0.31), for the *reflection during mentoring* outcome in the intervention group. For the control group, the means (and SDs) ranged from 2.96 (SD = 0.51) for *student-centered evaluation* to 3.67 (SD = 0.42) for *reflection during mentoring*. The means (and SDs) of mentorship competence outcomes measured by the post-training test ranged from 3.24 (SD = 0.41) for *student-centered evaluation* to 3.83 (SD = 0.31) for *reflection during mentoring* in the intervention group. For the control group, the means (and SDs) ranged from 3.22 (SD = 0.53) for *student-centered evaluation* to 3.77 (SD = 0.37) for *reflection during mentoring*. These ranges indicate that the areas of lowest and highest mentorship competence were the same for both groups in both the pre- and post-training tests. *Reflection during mentoring* did not show a statistically significantly increase after training in either group.

After training, all but one area of mentorship competence (*reflection during mentoring*) showed a statistically significant difference (Table 3). The intervention group produced larger mean differences than the control group in the following competence areas: *mentoring practices in the workplace* (0.48 vs. 0.34); *supporting the student's learning process*

(0.23 vs. 0.21); *goal-oriented mentoring* (0.23 vs. 0.21); *student-centered evaluation* (0.28 vs. 0.26); and *overall competence* (0.47 vs. 0.21). The control group produced larger mean differences than the intervention group in the following competence areas: *mentoring practices between student and mentor* (0.38 vs. 0.15); *mentor characteristics* (0.18 vs. 0.09); *identifying the student's need for mentoring* (0.20 vs. 0.15); *mentor motivation* (0.15 vs. 0.06); and *constructive feedback* (0.28 vs. 0.21).

Comparison of Mentorship Training between Intervention and Control Groups. Post-training test results showed no statistical difference between the blended (intervention group) and online-only (control group) training methods. Both groups attained improved outcomes in the various competence areas with no differences in the training methods. Pre-training test results showed statistical differences in the means (and SDs) between the intervention and control groups in the following competence outcomes: *mentor characteristics* (3.62 (SD 0.33) vs. 3.46 (0.39), $P < 0.01$); *identifying the student's need for mentoring* (3.60 (SD 0.43) vs. 3.45 (SD 0.51), $P = 0.04$); *mentor motivation* (3.67 (SD 0.34) vs. 3.51 (SD 0.40), $P < 0.01$); and *overall evaluation* (3.53 (SD 0.61) vs. 3.83 (SD 0.55), $P < 0.01$).

Discussion

The aim of the study was to compare the effects of the blended (combined in-person and online) and online-only methods of mentorship training on mentorship competence in mentoring healthcare students. The results showed statistically significant improvements in mentor competence after training for both the intervention and control groups in all outcome areas of mentor competence measured except *reflection during mentoring*.

When developing mentorship training, it is important to identify areas of mentoring that can be taught online and areas that require a blended method. The blended method, which combines

Table 2. Socio-demographic data of participants (n = 256)

Socio-demographic and Background Information	Intervention group (n = 192) n (%)	Control group (n = 64) n (%)	P value
Gender *Female* *Male*	180 (93.8) 12 (6.3)	58 (90.6) 6 (9.4)	0.40
Age *under 25 years* *25–29 years* *30–39 years* *40–49 years* *over 50 years* *missing values*	4 (2.1) 35 (18.2) 70 (36.5) 52 (27.1) 29 (15.1) 2 (1.0)	4 (6.2) 11 (17.2) 16 (25.0) 15 (23.4) 18 (28.1)	0.06

Continuation of Table 2

Socio-demographic and Background Information	Intervention group (n = 192) n (%)	Control group (n = 64) n (%)	P value
Education			
Vocational school	24 (12.5)	9 (14.1)	0.89
University of applied sciences	153 (79.7)	51 (79.7)	
Upper University of applied sciences	2 (1.0)	1 (1.6)	
University (bachelor)	5 (2.6)	1 (1.6)	
University (master)	3 (1.6)	2 (3.1)	
missing values	5 (2.6)	–	
Graduation year °	2004 (8.95)	2004 (10.56)	0.74
Current title			
Practical nurse	23 (12.0)	8 (12.5)	0.09
Registered nurse	120 (62.5)	40 (62.5)	
Therapist (physio, occupational, foot, speech)	9 (4.7)	0 (0.0)	
Midwife	10 (5.2)	8 (12.5)	
Radiographer	10 (5.2)	5 (7.8)	
Bioanalyst	11 (5.7)	0 (0.0)	
Other	9 (4.7)	3 (4.7)	
Work experience			
under 3 years	33 (17.2)	2 (3.1)	< 0.01
3–5 years	36 (18.8)	7 (10.9)	
6–10 years	39 (20.3)	6 (9.4)	
11–15	37 (19.2)	16 (25.0)	
16–20	22 (11.5)	15 (23.4)	
21–30	17 (8.9)	18 (28.1)	
31–40	6 (3.1)	0 (0.0)	
missing values	2 (1.0)		
Current work unit			
Inpatient unit	100 (52.1)	37 (57.8)	0.20
Outpatient unit	20 (10.4)	12 (18.8)	
Inpatient and outpatient unit	14 (7.3)	3 (4.7)	
Operating unit	26 (13.5)	4 (6.3)	
Other	31 (16.1)	8 (12.5)	
missing values	1 (0.6)		
Last time a student was mentored			
Last week	77 (40.1)	22 (34.4)	< 0.01
Last month	27 (14.1)	16 (25.0)	
Last half a year	50 (26.0)	12 (18.8)	
Last year	8 (4.2)	8 (1.,5)	
Over a year ago	2 (1.0)	6 (9.4)	
missing values	28 (14.6)	–	
How often a student was mentored			
Daily	18 (9.4)	2 (3.1)	0.02
Weekly	61(31.8)	13 (20.3)	
Monthly	46 (24.0)	22 (34.4)	
Yearly	37 (19.3)	22 (34.4)	
Seldom	2 (1.0)	5 (7.8)	
missing values	28 (14.6)	–	
Participated in mentorship training			
Yes	50 (25,0)	20 (31.3)	0.91
No	114 (59,4)	44 (68.6)	
missing values	28 (14.6)	–	

° Mean (standard deviation). P < 0.05
Parametric continuous data analyzed using the independent samples t-test
Categorical data analyzed using Chi-squared test

Table 3. Results of student mentorship training in two hospital districts (n = 256)

Outcomes	Testing	Intervention group (n = 192) Mean (SD)	Control group (n = 64) Mean (SD)	Mann-Whitney U Test results P value
Mentoring practices in the workplace	Pre-test	3.01 (0.53)	3.21 (0.51)	U = 4911.00 Z = −2.42 P = 0.16
	Mean differences	0.48	0.34	
	Post-test	3.49 (0.45)	3.55 (0.47)	U = 5338.00 Z = −1.59 P = 0.11
	Wilcoxon Signed Ranks Test results, P value	Z = −9.14 P < 0.01	Z = −4.95 P < 0.01	
Mentoring practices between mentor and student	Pre-test	3.46 (0.47)	3.21 (0.51)	U = 5436.00 Z = −1.40 P = 0.16
	Mean differences	0.15	0.38	
	Post-test	3.61 (0.42)	3.59 (0.49)	U = 24528.50 Z = −0.29 P = 0.77
	Wilcoxon Signed Ranks Test results, P value	Z = −4.12 P < 0.01	Z = −0.3.27 P < 0.01	
Mentor characteristics	Pre-test	3.62 (0.33)	3.46 (0.39)	U = 4600.00 Z = −3.03 P < 0.01
	Mean differences	0.09	0.18	
	Post-test	3.71 (0.30)	3.64 (0.30)	U = 5992.00 Z = −0.30 P = 0.76
	Wilcoxon Signed Ranks Test results, P value	Z = −3.44 P < 0.01	Z = −3.95 P < 0.01	
Identifying the student's need for mentoring	Pre-test	3.60 (0.43)	3.45 (0.51)	U = 5127.50 Z = −2.04 P = 0.04
	Mean differences	0.15	0.20	
	Post-test	3.75 (0.35)	3.65 (0.53)	U = 5517.00 Z = −1.34 P = 0.18
	Wilcoxon Signed Ranks Test results, P value	Z = −4.45 P < 0.01	Z = −2.70 P = 0.01	
Mentor motivation	Pre-test	3.67 (0.34)	3.51 (0.40)	U = 4440.50 Z = −3.38 P < 0.01
	Mean differences	0.06	0.15	
	Post-test	3.73 (0.31)	3.66 (0.43)	U = 6093.50 Z = −0.10 P = 0.92
	Wilcoxon Signed Ranks Test results, P value	Z = −2.39 P = 0.02	Z = −2.83 P = 0.01	
Supporting the student's learning process	Pre-test	3.33 (0.35)	3.24(0.41)	U = 5287.00 Z = −1.68 P = 0.09
	Mean differences	0.23	0.21	
	Post-test	3.56 (0.37)	3.45 (0.47)	U = 5530.00 Z = −1.21 P = 0.23
	Wilcoxon Signed Ranks Test results, P value	Z = −7.46 P < 0.01	Z = −3.99 P < 0.01	

Continuation of Table 3

Outcomes	Testing	Intervention group (n = 192) Mean (SD)	Control group (n = 64) Mean (SD)	Mann-Whitney U Test results P value
Goal-oriented mentoring	Pre-test	3.33(0.43)	3.24 (0.43)	U = 5372.50 Z = −1.51 P = 0.13
	Mean differences	0.23	0.21	
	Post-test	3.56 (0.35)	3.45 (0.44)	U = 5352.00 Z = −1.55 P = 0.12
	Wilcoxon Signed Ranks Test results, P value	Z = −6.86 P < 0.01	Z = −3.98 P < 0.01	
Reflection during mentoring	Pre-test	3.79(0.31)	3.67 (0.42)	U = 5418.50 Z = −1.52 P = 0.13
	Mean differences	0.04	0.10	
	Post-test	3.83 (0.31)	3.77 (0.37)	U = 5790.50 Z = −0.80 P = 0.42
	Wilcoxon Signed Ranks Test results, P value	Z = −1.30 P = 0.19	Z = −1.86 P = 0.06	
Student-centered evaluation	Pre-test	2.96 (0.51)	2.96 (0.51)	U = 5990.50 Z = −0.30 P = 0.76
	Mean differences	0.28	0.26	
	Post-test	3.24 (0.41)	3.22 (0.53)	U = 5982.50 Z = −0.32 P = 0.75
	Wilcoxon Signed Ranks Test results, P value	Z = −7.29 P < 0.01	Z = −4.58 P < 0.01	
Constructive feedback	Pre-test	3.40 (0.42)	3.28 (0.50)	U = 5279.50 Z = −1.71 P = 0.88
	Mean differences	0.21	0.28	
	Post-test	3.61 (0.40)	3.56 (0.49)	U = 6039.50 Z = −0.21 P = 0.83
	Wilcoxon Signed Ranks Test results, P value	Z = −6.01 P < 0.01	Z = −3.80 P < 0.01	
Overall competence	Pre-test	3.53 (0.61)	3.83 (0.55)	U = 4480.50 Z = −3.78 P < 0.01
	Mean differences	0.47	0.21	
	Post-test	4.00 (0.50)	4.04 (0.44)	U = 4794.00 Z = −0.45 P = 0.66
	Wilcoxon Signed Ranks Test results, P value	Z = −9.23 P < 0.01	Z = −2.53 P = 0.01	

in-person and online training, is the most popular mentorship training method (10, 20). The comparison of existing mentorship training prog-rams poses a challenge because programs vary vastly in content and organization, and the most effective method is yet to be identified (10, 34). The results of this study may help mentorship training developers choose the most appropriate methods for different mentoring competence areas. Tailoring training to meet mentor competence needs helps healthcare organizations offer more effective ways to train mentors (12).

This study showed that the following areas of mentorship competence improved with a blended training method: *mentoring practices in the workplace*;

supporting the student's learning process; *goal-oriented mentoring*; *and student-centered evaluation*. Previous studies showed that discussion with other students, whether face-to-face or via another medium, and teacher support were considered important training components (21, 35). These components should be accounted for when designing online training. Also, the student assessment process mostly comprises the abovementioned competence areas (36, 37). Student assessment has become more holistic (38), and mentors have felt incapable of performing high-quality assessments (36, 37). We recommend that developers of mentorship training programs concentrate on training outcomes for the competence areas identified above.

Furthermore, we suggest that in-person training is useful for practicing *reflection in mentoring* as it facilitates face-to-face interaction among mentors and their peers. In a previous study, use of a reflective learning component during training helped mentors create and manage instructive positive relationships with students (4, 18). The long-term result of increased mentor participation in mentorship competence training is a transformation of the workplace culture into a positive learning environment (10, 18).

This study also showed that the following areas of mentorship competence improved with the online-only method: *mentoring practices between mentor and student*; *mentor characteristics*; *identifying the student's need for mentoring*; *mentor motivation*; and *constructive feedback*. Tuomikoski et al. (7) stated, based on study results from mentors' profiles, that novice mentors must develop competence in the abovementioned areas. Novice nurses felt anxious when they failed to create meaningful interaction with students (39). Mentors need more support to rely on their own competence (39–41). Strong clinical expertise boosts confidence in mentoring and enables more efficient allocation of resources between patient work and mentoring (42). Altogether, the findings of this and the corroborating studies could be cautiously interpreted to suggest that novice mentors may be trained online in the abovementioned areas of mentoring.

Previous studies report that online training was perceived as challenging and under-supported (26, 35, 43). Although online training is appreciated for its inherent flexibility in scheduling and location, such that it can be implemented to suit participants' individual schedules (10, 12), participants have difficulty staying engaged (25, 26). Participants' age, experience with computers, learning style, and attitude towards technology all affect satisfaction and engagement with online training (25, 34). Perhaps the reasons explain why there was such a high dropout in the control group. Online training courses should be well-designed to meet individual participant needs (21, 44). In this study, participants in the online-only training group had more work experience and were mentoring students less frequently than those in the blended training group. We suggest that prospective mentors' backgrounds be accounted for when designing mentorship competence training.

Limitations. This study has the following limitations. Firstly, all participants volunteered for training and, therefore, may have been more motivated about training in general, which may have affected the results. Secondly, the outcomes were measured using a self-assessment instrument, which may have produced more positive mentorship competence results than would have been produced with independent assessment. Thirdly, the study procedures for the intervention and control groups were not conducted in parallel. Moreover, the timeline for the intervention group was longer than that of the control group, despite the training having the same goals and content. Fourthly, this study did not include subsequent follow-up on mentorship competence, which would have supported a more reliable interpretation of the study results. Finally, the dropout rate in the control group was high due to volunteer participation in the study and online data collection methods. Researchers were not able to influence data collection since the education was offered on a continuous basis. The following checklists were used to reinforce the study design: the Transparent Reporting of Evaluations with Non-Randomized Designs (TREND) checklist (45); and the Template for Intervention Description and Replication checklist (46). These checklists were used during development, implementation and evaluation of the interventions in the study.

Conclusion

This study aimed to compare the effects of two methods of mentorship competence training, blended and online-only training, for mentors of healthcare students. The main finding was that both training methods increased mentorship competence. We recommend that blended training be used when addressing mentorship topics involving support of a student's learning process, goal-oriented mentoring, and student-centered evaluation. The in-person component of blended training is useful for practicing reflection during mentoring as it allows mentors to practice face-to-face with their peers. Online-only training could focus on general mentorship topics and common mentoring practices such as mentor characteristics and the development of safe clinical learning environments.

More research is needed to compare training conducted only in an in-person setting, and to compare mentor background factors that could affect training effectiveness. The results of such future research would support development of individually effective mentorship training. The long-term goal of mentorship competence training is to provide high-quality mentoring for students aspiring to healthcare professions by creating cultural change in healthcare units to provide a positive learning environment. Achievement of this long-term goal is key, and healthcare organizations should consider these, and other relevant study findings so that they can more efficiently allocate limited available resources for effective mentorship training.

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