



## Effect of Self-Development Training on Self-Directed Learning Readiness Scale Scores of Obstetrics and Gynecology Residents



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### ABSTRACT

**Aims** This investigation evaluated the impact of self-development training on the self-directed learning readiness of obstetrics and gynecology residents at the Faculty of Medicine, Universitas Airlangga.

**Materials & Methods** This experimental randomized study included an intervention group that participated in the training and a control group that followed conventional procedures. The training method consisted of a two-week workshop that included four learning stations: time management, active learning, learning styles, and curriculum comprehension. Evaluations of the Self-Directed Learning Readiness Scale were administered prior to and one month following the intervention using the Fisher's Questionnaire.

**Findings** The intervention group's self-management scores were significantly improved by the training ( $p=0.042$ ). This improvement reflected the residents' enhanced capacity to manage their time, prioritize tasks, and maintain discipline. The intervention group demonstrated a (non-significant) more pronounced trend of improvement in all domains of the Self-Directed Learning Readiness Scale. The discussion underscores the practicality of the self-development training, which enhances time management skills and assists residents in developing more effective learning strategies. This training also helps residents manage the demands of residency and achieve a more optimal work-life balance.

**Conclusion** Self-development and time management training are effective in enhancing the self-management of residents.

**Keywords** Self-Directed Learning Readiness Scales; Gynecology; Obstetrics; Medical Education

### CITATION LINKS

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## Introduction

The Obstetrics and Gynecology specialty education program is among the most challenging postgraduate medical training programs, requiring an exceptional level of dedication from its participants. This is primarily due to the substantial workload, prolonged working hours (often exceeding 40 hours a week), a rigid and hierarchical learning environment, increased stress and pressure, irregular break times, and instances of bullying. These characteristics hinder obstetrics and gynecology residents' capacity to efficiently manage their time and engage in independent study. Not all residents possess the ability to manage their time effectively for self-directed learning (SDL) within their rigorous schedules. This is evident from the lack of academic success or performance during the educational period [1-3].

SDL is an educational method in which individuals autonomously assess their learning requirements, establish learning objectives, identify educational resources, choose and implement suitable learning strategies, and evaluate the results of their learning, with or without external support. In postgraduate education, residents are expected to have attained proficiency in self-directed study skills. Proficiency in self-directed learning readiness (SDLR) is crucial for residents, as it underpins the professionalism of specialists and ensures that their competence, clinical, and academic skills align with advancements in medical research. The primary criteria for evaluating SDL involve conducting the Self-Directed Learning Readiness Scale (SDLRS) assessment using a questionnaire of 40 questions developed by Fisher. This SDLRS comprises the domains of self-management (SM), desire for learning (DL), and self-control (SC). Our preliminary investigation revealed that 29% of residents displayed inadequate SDLRS scores. Further examination determined that the most problematic domain was SM, with 77% of residents demonstrating suboptimal SM capabilities. Poor time management was identified as the primary factor contributing to the low SM ratings among most residents [4-6].

Self-development training is a process aimed at improving self-awareness and fostering learning skills for learners, especially residents. The course of study will focus on five essential elements of the resident learning process: time management, self-awareness, learning methodologies, educational practices (active learning), and personal strategies [7-10]. Time management training is a crucial component of self-development programs designed to assist individuals in optimizing their time utilization [11-13]. This training is essential for medical students and residents due to the substantial academic and clinical demands they must fulfill. Residents are expected to acquire the skills to create and implement effective learning methods through extensive self-

development training, thereby enhancing their readiness for independent learning. This can be assessed by evaluating the SDLRS scores before and after the intervention. This investigation aimed to compare the SDLRS scores of obstetrics and gynecology residents at the Faculty of Medicine, Airlangga University, who underwent self-development and time management training interventions with those who experienced conventional approaches.

## Materials and Methods

### Study design and sample

This randomized controlled trial with an experimental design and unblinded assessment following the intervention was conducted on obstetrics and gynecology residents at the Faculty of Medicine, Airlangga University, Surabaya, Indonesia. The trial duration was from August 2024 to January 2025. The participants were obstetrics and gynecology residents from the Faculty of Medicine, Airlangga University, who met the inclusion and exclusion criteria. The inclusion criteria comprised obstetrics and gynecology residents in the first three semesters of their education and no clear exclusion criteria were applied. A total sample technique was employed, meaning we included all (n=43) obstetrics and gynecology residents from the 1st to the 3rd semester. The collected samples were randomly allocated into two groups using a simple random sampling method. The control group underwent conventional treatment, whereas the intervention group participated in a self-development training intervention. The SDLRS score assessment was conducted before and after the intervention (one month), and the results were compared between the two groups.

### Intervention

The training intervention was conducted in three phases: the pre-workshop phase (before training), the workshop (execution of training), and the post-workshop phase (after training). All three stages constituted the training intervention that residents in the treatment group must adhere to. Prior to the training, participants were provided with learning resources, including lecture content and recordings from instructors on the online learning platform. Participants in the training were given two weeks to review and complete all educational materials, comprising five modules: understanding the curriculum, active learning, learning styles, time management, and personal strategies. Upon finishing all educational modules, participants were asked to complete a quiz consisting of 10 questions to assess their learning outcomes (formative).

The training was conducted in a one-day workshop. Role-playing, in-depth discussions, and the completion of questionnaires in rotation across four phases comprised the interactive training method.

The current stages addressed four critical subjects that are essential for the independent learning readiness of residents: active learning, learning styles, time management, and the curriculum. In the stages of active learning and time management, participants required to role-play specific scenarios and engage in discussions regarding alternative approaches to problem-solving. Residents were asked to complete the VARK Questionnaire during the learning styles stage to evaluate their most dominant learning style. During the curriculum understanding station, residents engaged in an in-depth discussion with the lecturer regarding their knowledge of the curriculum as a whole, their learning objectives for the upcoming semester, and their study plans.

Upon completion of the training, all residents were required to create their own personal strategy for addressing future specialist education. This strategy included the preparation of future learning objectives, a summary of the curriculum, the selection of a learning style, the implementation of active learning methods, and the development of effective time management in daily activities.

#### Instrument

The Fisher version of the SDLRS, which comprises 40 questions and a total score of 200 points, was employed to assess SDLR [14]. The SDLRS is divided into three domains: SM, DL, and SC. Each domain consists of 13, 12, and 15 questions, with total scores of 65, 60, and 75 points, respectively. The SDLRS is the aggregate of the SM, DL, and SC scores. The optimal cut-off values for each SDLRS domain—SM, DL, and SC—are 150, 47, 44, and 59 points, respectively, according to Fisher's criteria [14].

The validity and reliability of the questionnaire were assessed in a prior study involving 102 obstetrics and gynecology residents. The reliability of the questionnaire was evaluated using Cronbach's  $\alpha$  statistical analysis, where a value exceeding 0.7 indicates good reliability. The questionnaire measurement yielded a Cronbach's  $\alpha$  value of 0.946. To evaluate the validity of the Fisher Questionnaire, we employed factor analysis to examine each question item. A factor loading greater than 0.4 indicates that a question item possesses good validity. The analysis of the questionnaire results revealed that the factor loading for all items varied between 0.598 and 0.841.

#### Data analysis

SPSS 29 was used to analyze the data. The initial step was to ascertain the normality of the data distribution.

Subsequently, the chi-square test or Fisher's exact test was implemented for categorical data, while the independent t-test or Mann-Whitney test was used for numerical data.

If the p-value was less than 0.05, the statistical analysis was considered significant.

## Findings

A total of 43 participants were recruited at the outset of the study, with 21 residents in the intervention group and 22 residents in the conventional (control) group. However, two individuals in the intervention group withdrew from the study during its implementation, resulting in a total of 19 participants. There were no statistically significant differences in gender, age, education level, medical faculty of origin, last education, GPA, and status ( $p>0.05$ ; Table 1).

**Table 1.** Frequency of characteristics of groups that receive self-development training and conventional methods

Parameter	Control group (n=22)	Intervention group (n=19)	p-Value
<b>Gender</b>			0.938
Female	13 (59)	11 (57.9)	
Male	9 (41)	8 (42.1)	
<b>Age (year)</b>			-
25-30	12 (54.5)	10 (52.6)	
30-35	8 (36.3)	9 (47.4)	
>35	2 (9.2)	0	
<b>Semester</b>			0.757
1	5 (22.7)	7 (36.8)	
2	7 (31.8)	6 (31.6)	
3	10 (45.5)	6 (31.6)	
<b>Origin of medical faculty</b>			0.945
Government	16 (72.7)	14 (73.7)	
Private	6 (27.3)	5 (26.3)	
<b>Last education</b>			0.915
Bachelor's degree	21 (95.5)	18 (94.7)	
Master's degree	1 (4.5)	1 (5.3)	
<b>GPA</b>			0.219
3.5-4	6 (27.3)	4 (21.1)	
3-<3.5	14 (63.6)	13 (68.4)	
2.5-<3	2 (9.1)	2 (10.5)	
<b>Status</b>			0.975
Independent	14 (63.6)	12 (63.2)	
Hospital assignment	8 (36.4)	7 (36.8)	

The SM, DL, SC, and the whole scale scores in both groups were not significantly different prior to treatment ( $p>0.05$ ; Table 2).

**Table 2.** Difference in mean Self-Directed Learning Readiness Scale (SDLRS) scores in the two groups before the intervention

Parameter	Intervention group	Control group	p-Value
<b>Self-management</b>	49.71±5.23	50.10±6.42	0.35
<b>Desire for learning</b>	50.05±6.70	49.19±6.44	0.333
<b>Self-control</b>	60.67±7.53	60.81±7.35	0.435
<b>SDLRS</b>	160.43±18.86	160.10±18.98	0.488

The same results were also observed following the treatment. There was no significant difference in the SM, DL, SC, and the whole scale scores of both groups after treatment ( $p>0.05$ ; Table 3).

In the subsequent analysis, an assessment was made of the discrepancies in the proportion of optimal SM, DL, SC, and the whole scale scores between the two groups, both before and after treatment. The proportion of optimal SM, DL, SC, and the whole scale scores was not significantly different between the conventional method group and the group that

received self-development training, both before and after treatment ( $p > 0.05$ ; Tables 4).

**Table 3.** Differences in mean Self-Directed Learning Readiness Scale (SDLRS) scores in the two groups after treatment

Parameter	Intervention group	Control group	p-Value
Self-management	53.05±7.06	50.55±6.72	0.126
Desire for learning	52.00±6.94	49.95±6.45	0.167
Self-control	63.53±7.09	62.68±6.75	0.349
SDLRS	168.58±19.56	163.18±18.11	0.182

**Table 4.** Frequency of optimal difference in Self-Directed Learning Readiness Scale (SDLRS) scores between the two groups before and after treatment

Parameter	Intervention group	Control group	p-Value
<b>Before treatment</b>			
Self-management	15 (78.95)	16 (72.7)	0.644
Desire for learning	18 (94.74)	18 (81.8)	1
Self-control	11 (57.89)	15 (68.2)	0.495
SDLRS	11 (57.89)	18 (81.8)	0.093
<b>After treatment</b>			
Self-management	15 (78.95)	17 (77.27)	0.897
Desire for learning	18 (94.74)	21 (95.45)	0.915
Self-control	14 (73.68)	16 (72.73)	0.945
SDLRS	15 (78.95)	18 (81.8)	0.817

## Discussion

This study evaluated the effect of self-development training on the SDLR of obstetrics and gynecology residents at the Faculty of Medicine, Universitas Airlangga. The average scores of all domains (SM, DL, and SC) and the whole scale were found to be higher in the group that received self-development and time management training compared to the group that received the conventional method after treatment. Furthermore, there was no distinction between the two groups in all scores (SM, DL, SC, and the whole scale) before and after treatment, as determined by the optimal score criteria. While these differences were not statistically significant, this finding suggests that training has a more positive effect on self-learning readiness than the conventional approach. The intervention group exhibited a higher total SDLRS score, which indicates their overall readiness for self-directed learning. This suggests that the structured training approach has a beneficial effect on overall learning preparedness, in addition to individual domains. The intervention group demonstrated a general trend toward higher SDLRS scores and all domain scores compared to the conventional group, which may be attributed to three factors. The first factor is a comprehensive training regimen. The training encompasses elements of reflection, learning strategies, and time management, which not only enhance one domain but also reinforce each other across the SDLRS domains. The second factor is the implementation of interactive techniques in this training. Passive conventional methods are less effective than active participation through role-playing and discussion. Subsequently, this training aims to strengthen the concept of self-directed learning. In accordance with the principles

of adult learning, this training is specifically designed to motivate residents to take responsibility for their own learning [7, 9, 10, 15, 16].

This training is crucial for the development of residents' independent learning readiness due to its numerous benefits, including enhanced independent learning competency, improved long-term SDL through internalization, and positive contributions to the development of professional skills. This training specifically emphasizes pertinent domains within the SDLRS, such as SC, DL, and SM. It assists participants in acquiring the fundamental skills required for independent learning, including self-reflection, learning strategies, and time management. According to research by O'Brien *et al.*, consistent skills-based training can yield substantial long-term benefits, particularly for medical students [17]. A high level of self-directed learning preparedness is crucial not only for academic achievement but also for future career advancement. Individuals possessing strong self-directed learning skills are more adept at staying updated on medical advancements, fulfilling continuing education requirements, and adapting to emerging clinical issues [4, 18, 19]. Enhancing time management skills enables residents to navigate clinical and academic responsibilities more effectively, thereby improving their workplace performance [20]. Several studies have indicated that skills-based training can have lasting positive effects. In comparison to conventional methods, McGaghie *et al.* found that repeated training at specific intervals leads to improved clinical skill mastery and self-directed learning [21]. A self-development and reflection program implemented with medical students results in an increase in critical thinking skills and learning motivation, despite the initially low impact [22, 23].

Self-confidence, autonomy, motivation, and readiness for lifelong learning are among the numerous qualities that medical students must cultivate. SDL is one of the abilities that medical students must acquire in order to become lifelong learners. In a study conducted by Anil *et al.*, first-year medical students who were assigned SDL training assignments find the SDL learning method to be satisfactory. Participants are able to establish learning objectives (56.48%), engage in the learning process (75.57%), evaluate their learning (47.33%), and ascertain their readiness to learn (52.67%) through the use of SDL exercises. The majority of participants find SDL to be beneficial in terms of comprehending the material and learning at their own pace [19].

Our results are not optimal due to its limitations. One factor contributing to this outcome was the relatively brief time interval between training and post-treatment measurements. The process of internalizing new skills, particularly those related to self-management and learning strategies, requires a longer period to have a substantial impact on

learning outcomes and behavior [18, 24, 25]. Residents may not be able to fully integrate the time management skills and study strategies taught in the training into their daily routines within a one-month period.

Despite the fact that the differences in scores were not statistically significant, the intervention group's tendency for higher SDLRS scores suggests that this training has the potential to significantly enhance the self-learning readiness of residents. The effect is expected to be more substantial if the training is repeated and evaluated over an extended period. This type of training could be a strategic step in enhancing the quality of self-directed learning among residents in the face of the high demands of residency.

## Conclusion

Self-development and time management training are effective in enhancing the self-management of residents.

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