



## Efficacy of logbook as a clinical assessment: Using DOPS evaluation method

Shahzad Mehranfard<sup>1,2</sup>, Ferdos Pelarak<sup>3</sup>, Hamideh Mashalchi<sup>1</sup>, Leila Kalani<sup>1</sup>, Leila Masoudiyekta<sup>1,5\*</sup>

<sup>1</sup>Department of Nursing, School of Nursing and Midwifery, Dezful University of Medical Science, Dezful, Iran

<sup>2</sup> Department of Medical Ethics, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

<sup>3</sup>Department of Nursing, School of Nursing and Midwifery, Islamic Azad University, Dezful, Iran

<sup>4</sup>School of Paramedical Science, Dezful University of Medical Science, Dezful, Iran

<sup>5</sup>Department of Medical Ethics, Medical Ethics and History of Medicine Research Center, Tehran University of Medical Sciences, Tehran, Iran

### Abstract

**Background and aims:** Clinical learning has a vital role in nursing. Appropriate methods should be used to evaluate the quality of clinical learning. For performance-based evaluation of nursing students, the effect of logbooks in an internship was investigated using the direct observation of procedural skills (DOPS) method.

**Methods:** This experimental study was performed on 80 second-semester nursing students by randomly assigning samples to two intervention and control groups at Dezful University of Medical Sciences in 2019. The logbook was used for the experimental group students, and the control group completed the internship without using a logbook. At the end of the internship, the students of two groups were evaluated by five procedures: changing the dressing, blood pressure control, IV catheterization, Intramuscular injection, and inserting a Foley catheter by DOPS test. Data were analyzed using qualitative and analytic statistics content analysis that was carried out using SPSS version 21 software.

**Results:** The mean score of DOPS in the intervention group was  $7.66 \pm 1.07$ , and in the control group,  $6.74 \pm 0.86$ , Which indicates that the mean score of the intervention group is 0.92 points higher than the mean score of the control group. In general, the scores of all clinical skills except inserting a Foley catheter in the intervention group were higher than the control group. However, this difference was significant only in two procedures.

**Conclusion:** The results of this study showed that the logbook and evaluation could increase clinical skills and collegians' more profound learning and be effective in a professional and influential workforce.

**Keywords:** Nurse, Students, Logbook, DOPS, Learning, Education

### \*Corresponding Author:

Leila Masoudiyekta,  
Email: [masoudiyekta@yahoo.com](mailto:masoudiyekta@yahoo.com)

Received: April 15, 2022

Accepted: December 15, 2022

Published: December 30, 2022

### Introduction

Acquiring clinical education enhances students' competence and ability regarding knowledge, clinical skills, and professional attitude (1). According to the critical role of clinical education in nursing and since the main tasks of nursing are performed in a clinical setting, appropriate methods should be used to assess the quality of clinical education (2). Clinical skills assessment accounts for more than half of the total evaluation of medical students, including nursing, and it is one of the most critical and challenging tasks for health system professors. This kind of assessment is performed to ensure that the student has acquired clinical competence in encountering the patient and their command of the necessary skills for protecting the patient and improving the health level of society (3). Evaluation is an essential aspect of education activities. Using novel methods of clinical evaluation is an important policy of educational institutions. Several methods are used for clinical

evaluation; Logbooks are among the most effective, novel techniques of clinical activity evaluation (4,5). Students can record their learning and patient care experiences in the log book and obtain the critical educational goals that must be achieved during a specific period (6). Logbook is an assessment method that can control students' academic content and experiences (7). Due to the need for more transparency of nursing students' responsibilities in the first days of clinical practices, educational goals, and student assessment methods should be clearly explained to students. So, using logbooks can be helpful in this regard (1). The use of logbooks has faced contradictory effects. Several studies stated that using the logbook method helps to achieve educational goals (8-11), But some studies indicated that the logbook might not fulfill its essential educational and evaluation goals (6,7,12). Although using a logbook increases clinical skills and even the satisfaction of students (8,9,13), it does not enable the provision of direct feedback immediately after implementing each

logbook. Providing on-time feedback to the learner is a fundamental part of the clinical education process; it is necessary to promote learning and achieve standards.

The assessment as direct observation of procedural skills (DOPS) – on the conventional methods of practical skills assessment – can also be used (8). The DOPS assessment method is the direct observation of a trainee while performing a practical procedure on an actual patient in an authentic environment. In Jasemi and colleagues' study, which used the DOPS test to assess nursing procedures, a significant increase was observed in skills performed in the intervention group (14). Based on the conducted studies, the DOPS method has suitable validity and reliability; hence, it can be used as a formative assessment and an accumulative tool. Given that providing feedback during the logbook implementation is one of its main parts, which provides an acceptable approach to improve learning, it has an essential role in clinical education. In a study comparing the effect of DOPS and traditional assessment methods on the clinical skills of nursing students, the results showed that using the DOPS method improved students' scores in performing clinical methods (15,16). Therefore, considering the critical role of clinical education and evaluation in nursing and according to different reports about the effectiveness of the log book, more research is needed in this field. This study aims to investigate the effect of the logbook method on nursing students' learning using the DOPS assessment method.

### Materials and Methods

This study was conducted using an experimental method from February to October 2019. The research population consisted of all students in the second semester who passed the fundamental nursing internship during two consecutive semesters, including 80 nursing students randomly divided into intervention (n=40) and control (n=40) groups. In each semester, 20 students were assigned to each group. Inclusion criteria were: passing the theoretical course of fundamentals of nursing, needing to become more familiar with the logbook and DOPS test in the past, and being willing to participate in the study. Exclusion criteria were voluntary student withdrawal to continue participating in the study. If, for any reason, students did not want to participate in the control or intervention group, they could be transferred to another group, and this would not harm their final score. Participants were explained detailed information about the study's objectives, assured about the data confidentiality, and informed about their right to participate in or withdraw from the study at any time. Informed consent was obtained from all participants. The samples were selected as a census from all second-semester students willing to participate in the study then using simple random sampling, they were randomly divided into two control and intervention groups. Each student was given a code; the numbers were placed in the lottery container. Among them, the numbers were

selected, recorded, and returned to the container. One week before the beginning of the internship, the logbook was explained to the experimental group in a briefing 2-hour session and explanations on the logbook and how to use it.

The duration of the internship was ten days. During the internship, the logbook of internship fundamentals of nursing was used for the experimental group, and the control group finished the internship without being informed of the logbook. At the end of the internship, the students of both groups were assessed and compared by the DOPS test in terms of five procedures in the field of fundamental nursing internship. Based on the educational and behavioral goals in the internship of fundamental and topic of nursing courses, five skills were selected for the assessment with the DOPS technique. These skills included changing the dressing, controlling blood pressure, Intravenous catheterization, intramuscular injection, and inserting a Foley catheter.

Regarding ethical principles, the logbook was awarded to the control group students after the research. DOPS test was used to compare the degree of clinical competence and achievement of educational goals for control and intervention groups. DOPS test is a method designed to evaluate practical skills and give feedback. This method requires direct observation of students during a procedure and simultaneous evaluation in writing. This method can evaluate students' practical skills objectively and structure. After the end of the educational course, the DOPS test was used to compare the degree of clinical competence and achievement of educational goals for both control and intervention groups. Each DOPS checklist assesses one practical skill. Each test lasts about 20 minutes which is 15 minutes for the observer to perform the observation and 5 minutes for providing feedback. The faculty member evaluates the student based on the points evaluated in the DOPS test while observing the procedure. The DOPS checklist includes questions that form the basis of skill in performing that procedure.

After the student performs the procedure, the faculty member records the results of the observations by marking the appropriate options in the checklist. The checklist questions included demonstrated understanding of indications and relevant anatomy, obtaining informed consent, aseptic technique, technical ability, the overall ability to perform the procedure, communication skills, seeking help where appropriate, consideration of patient/ professionalism, post-procedure management, demonstrating appropriate preparation pre-procedure and appropriate analgesia or safe sedation. Each question was scaled as unacceptable (score=0), below expectation (score=1-3), borderline expectation (score=4-6), meet expectation (score=7-9), and above expectation (score=10) (Table 1). We used a characteristic demographic questionnaire and DOPS checklist to collect the study data. The items of the demographic characteristics questionnaire were age, gender, marital

**Table 1.** Evaluation checklist of DOPS

Items	Unacceptable	Below expectation		BORDERLINE expectation			Meet expectation		Above expectation		
	0	1	2	3	4	5	6	7	8	9	10
1	Understanding of indications and relevant anatomy										
2	Obtaining informed consent										
3	Aseptic technique										
4	Technical ability										
5	Overall ability to perform the procedure										
6	Communication skills										
7	Seeks help where appropriate										
8	Consideration of patient/ professionalism										
9	Post-procedure management										
10	Demonstrates appropriate preparation pre-procedure										
11	Appropriate analgesia or safe sedation										

DOPS: Direct Observation of Procedural Skills.

status, and the average of the previous semester. The data were analyzed using SPSS version 21 and descriptive statistics (mean, standard deviation) and analytic statistics (independent *t* test). An independent *t* test was used to compare the final test scores in both control and intervention groups, and the significance level was set at  $P < 0.05$ .

**Results**

The mean age of the students in this study was  $20.9 \pm 1.8$ . Female (45%) and 22(55%) male. The results of this study showed that the mean score of the patient’s blood pressure assessment, IV catheterization, change dressing, and intramuscular injection skills in the intervention group was higher than the control group (Table 2). Table 2 shows the score of the DOPS test in the control and experimental groups for each procedure. However, the mean score of the inserting Foley catheter implantation procedure in the intervention group was  $6.50 \pm 0.79$ ; in the control, the group was  $6.81 \pm 0.47$ ; the control group’s mean score was 0.31 points higher than the mean score of the intervention group. Table 3 shows in general, the scores of all clinical skills except Foley catheter implantation in the intervention group ( $7.66 \pm 1.07$ ) were higher than the control group ( $6.74 \pm 0.86$ ), therefore the average score of the intervention group was 0.92 points higher than the average score of the control group. Comparison of the mean final scores of the intervention and control groups with the independent *t* test showed a significant difference in IV catheterizations and change dressing skills, as shown in detail in Table 4. The result of comparing the mean scores of the control and intervention groups using the independent *t* test shows, there is a statistically significant difference in general between the mean scores of the two groups ( $P$  value  $< 0.002$ ) (Table 5).

**Discussion**

In the present study, we investigated the effectiveness of

**Table 2.** The Mean and standard deviation of the DOPS score in the control and experimental groups

Procedures	Groups	
	Control	Intervention
	Mean $\pm$ SD	Mean $\pm$ SD
Intramuscular injection	$7.27 \pm 0.62$	$7.75 \pm 0.83$
Foley catheter	$6.81 \pm 0.47$	$6.50 \pm 0.79$
change dressing	$6.17 \pm 0.90$	$7.64 \pm 0.63$
IV catheterization	$6.54 \pm 1.31$	$8.68 \pm 0.68$
Blood pressure	$6.83 \pm 0.45$	$7.72 \pm 1.22$

**Table 3.** General Mean and standard deviation of patients’ scores in control and experimental groups

Group	Sample size	Mean $\pm$ SD
Control	40	$6.74 \pm 0.86$
Intervention	40	$7.66 \pm 1.07$

**Table 4.** The result of the independent *t* test to compare the mean scores of control and intervention groups

Group	Mean difference (intervention - control)	Standard deviation	T-statistic value	P value
Intramuscular injection	-0.48	0.35	-1.36	0.193
Foley catheter	0.30	0.32	0.94	0.363
change dressing	-1.47	0.39	-3.77	0.002
IV catheterization	-2.14	0.52	-4.08	0.002
Blood pressure	-0.89	0.46	-1.94	0.085

Significant  $P$  value  $< 0.05$ .

**Table 5.** The result of the independent t-test compares the mean score of control and intervention groups in general

Group	Mean difference (intervention - control)	Standard deviation	T-statistic value	Probability value
In general	-0.92	0.21	-4.28	$< 0.0001$

Significant  $P$  value  $< 0.05$ .

the logbook on learning in the field of clinical practice among nursing students using the DOPS evaluation method. The results of the study showed that there is a statistically significant difference between the mean scores of the DOPS test in the control and intervention groups ( $P$  value < 0.0001), meaning that the use of a logbook in internships has improved the level of clinical skills of students compared to traditional methods (not using logbooks). The results of several studies confirm the impact of logbooks on students' learning (8,9,12,17-20). In the study of Schick et al on final-year medical students, they investigated implementing an activity recording system with a logbook in several educational centers. For evaluation purposes, telephone interviews were conducted. Following qualitative content analysis, the results showed that implementing a logbook on professional activities in the final year of undergraduate medical education in Germany—a multicentric pilot study fosters competency-based learning opportunities (9). In the present study, the DOPS score of all procedures except the inserting Foley catheter in the intervention group was higher than the control group. The non-increasing DOPS score of the inserting Foley catheter procedure may be due to the difficulty and complexity of this procedure compared to other procedures and probably because of the non-familiarity of the students with the procedure and not repeating it. Table 3 shows that the student's assessment scores increased in the intervention group (except Foley catheter). However, the comparison of the mean DOPS score of the two intervention and control groups was significant only in the changing dressing ( $P$  value = 0.002) and IV catheterization ( $P$  value = 0.002) (Table 4). The higher scores in the intervention group indicate the effect of the log book on learning students. One reason for the non-significance of the mean score may be due to students' lack of acceptance of the logbook. Najafi et al state that faculties' views about log books were more positive than students but the logbook meets the student's learning needs (7). In the Valizadeh et al study, the logbook quality was examined from the point of view of dental students. The student's opinion about the log book was moderate (13). Another reason, perhaps, is that the students were passing the first internship, which caused them to experience more stress; on the other hand, according to the DOPS test that is conducted directly, it can be stressful for students. This issue is also mentioned in Aghaeimaybodi and Marvasti's review study, which expresses that clinical evaluation evokes a mental and physical response in students so that they worry about the evaluation process and experience symptoms, including forgetfulness (21). In the assessment of students in the clinical field, the specific criteria and desired goals should be explained to the students to be guided in the right direction and to acquire the necessary skills (22); Farahmand and Asl Soleymani mentioned that the use of a log book requires more familiarity of the students with this tool and more monitoring of how to complete it (23).

In a mixed exploratory study that was conducted to plan a log book for nursing students, the use of a log book causes deep learning, but it showed some defects in the content and the way of its implementation (12), also a review study on the evaluation of students' clinical competencies using the log book indicated using the logbook for clinical assessment is associated with problems and presence of some defects, requires careful planning and preparation in its implementation (21), so that Several studies suggest that necessity of revise log book content continuously (6,7,12,13,21,24). In Asadilari and colleagues' study, combining the log book with other evaluation methods is recommended to achieve educational goals and better results (6). also, the results of studies confirm the effectiveness of the DOPS method in evaluating students (25,26), so in our study, we have used the log book with the DOPS evaluation method. In the study of Mirhosseini et al, which was conducted on 17 anesthesiology students, using the Logbook-DOPS integrated method to evaluate students' internships improved their clinical skills and deeper their understanding of concepts (8). So, it seems that some factors can affect logbook effectiveness, including lack of serious attention of faculty and students, faculty not having time and subsequent lack of adequate supervision, unsuitable justification of faculty and students, and only carrying out a general report of the activities (24). The present study generally showed that the logbook is effective in students' learning, but achieving all educational goals was impossible. Training should emphasize identifying the strengths and weaknesses of students in the implementation of skills and, by providing appropriate feedback, help students to overcome their weaknesses. Considering that the logbook is one of the common evaluation methods in medical sciences, paying attention to its content based on the educational goals, serious and sufficient attention, and supervision of the faculty in its effectiveness can be useful.

### Conclusion

Since one of the universities' most important tasks is ensuring sufficient skills and independent performance of their students at the end of their studies, effective teaching by providing feedback is currently emphasized when designing educational curriculum. In addition, educating capable students is one of the tasks of medical schools, which is also emphasized in the country's comprehensive health plan. Educational goals should be achieved with more emphasis on the educational content of the logbook. A limitation of this study was the presence of two different instructors, which can affect both the students' training and their evaluation. The other can be related to the student's educational status, learning, and the amount of practice of learned procedures.

### Acknowledgments

We thank Dezful University of Medical Sciences for providing financial resources and for the students who participate in this



research.

#### Authors' Contribution

**Conceptualization:** Shahzad Mehranfard, Ferdos Pelarak.

**Data curation:** Hamideh Mashalchi, Leila Kalani.

**Formal analysis:** Hamideh Mashalchi.

**Funding acquisition:** Shahzad Mehranfard.

**Investigation:** Leila Masoudiyekta.

**Methodology:** Shahzad Mehranfard, Leila Masoudiyekta.

**Project administration:** Shahzad Mehranfard, Leila Masoudiyekta.

**Resources:** Ferdos Pelarak, Leila Kalani.

**Software:** Leila Kalani.

**Supervision:** Leila Masoudiyekta, Shahzad Mehranfard.

**Validation:** Leila Masoudiyekta.

**Visualization:** Shahzad Mehranfard, Ferdos Pelarak.

**Writing—original draft:** Hamideh Mashalchi, Ferdos Pelarak.

**Writing—review & editing:** Shahzad Mehranfard, Hamideh Mashalchi.

#### Competing Interests

All authors declare that they have no conflict of interest.

#### Ethical Approval

The Ethics Committee approval was obtained from Dezfoul University of Medical Sciences (code IR.DUMS.REC.1397.028).

#### References

- Mahmoud GA, Omar AM. The effect of maternity nursing logbook on internship students' skills at woman's health hospital, Assiut Governorate. *J Nurs Educ Pract*. 2018;8(10):130-7. doi: [10.5430/jnep.v8n10p130](https://doi.org/10.5430/jnep.v8n10p130).
- Zarifnejad G, Rajabpoor M, Sharafi S, Mohsenizadeh M, Nejat-Mohammad A. Comparison the effect of clinical evaluation by two methods of case based discussion and logbooks on satisfaction of nursing students. *Res Med Educ*. 2019;11(3):30-8. doi: [10.29252/rme.11.3.30](https://doi.org/10.29252/rme.11.3.30). [Persian].
- Gholamnejad H, Ghofrani Kelishami F, Manoochehri H, Hoseini M. Efficacy of direct observation of procedural skills (DOPS) on practical learning of nursing students in intense care unit. *Education Strategies in Medical Sciences*. 2017;10(1):9-14. [Persian].
- Davarinia A, Borzoe F, Mohammadzadeh Tabrizi Z, Akbarzadeh R, Yazdimoghaddam H. Design, implementation and evaluation of web-based electronic logbooks for anesthetic and operating room students in clinical setting. *J Sabzevar Univ Med Sci*. 2022;29(2):195-205. [Persian].
- Asadilari M, Moshfeghy Z, Shahpari SM, Mohammad Alian F. Midwifery students' satisfaction with logbook as a clinical evaluation tool in Shiraz University of Medical Sciences. *Iran J Med Educ*. 2015;15(0):170-80. [Persian].
- Asadilari M, Moshfeghy Z, Mohammad Alian F, Shahpari M. Satisfaction of undergraduate midwifery students of Shiraz University of Medical Sciences from clinical evaluation using logbook. *Education Strategies in Medical Sciences*. 2018;11(1):22-9. doi: [10.29252/edcbmj.11.01.04](https://doi.org/10.29252/edcbmj.11.01.04). [Persian].
- Najafi F, Kermansaravi F, Mirmortazavi M, Gheisaranpour H. The efficacy of logbook in clinical wards from the viewpoints of nursing faculty members and students. *Res Med Educ*. 2017;9(3):64-55. doi: [10.29252/rme.9.3.64](https://doi.org/10.29252/rme.9.3.64). [Persian].
- Mirhosseini F, Manoochehri H, Musavi S, Hasanshiri F, Bigdeli S, Rahimi Moghadam Z, et al. Combining two performance-based assessment methods of logbook and DOPS in field internship of BSc anesthesiology students. *J Med Educ Dev*. 2017;10(27):46-56. doi: [10.29252/edcj.10.27.46](https://doi.org/10.29252/edcj.10.27.46). [Persian].
- Schick K, Eissner A, Wijnen-Meijer M, Johannink J, Huenges B, Ehrhardt M, et al. Implementing a logbook on entrustable professional activities in the final year of undergraduate medical education in Germany - a multicentric pilot study. *GMS J Med Educ*. 2019;36(6):Doc69. doi: [10.3205/zma001277](https://doi.org/10.3205/zma001277).
- Viseskul N, Nantsupawat A, Tachaudomdach C, Fongkaew W, Sriteerajit G. Developing an electronic logbook to monitor progress for international doctoral students in Thailand: a pilot study. *Walailak J Sci Technol*. 2019;16(1):47-54. doi: [10.48048/wjst.2019.3749](https://doi.org/10.48048/wjst.2019.3749).
- Barbieri A, Giuliani E, Lazzarotti S, Villani M, Farinetti A. Education in anesthesia: three years of online logbook implementation in an Italian school. *BMC Med Educ*. 2015;15:14. doi: [10.1186/s12909-015-0298-1](https://doi.org/10.1186/s12909-015-0298-1).
- Heidari H, Akbari N. Developing and implementing logbook in teaching principles and techniques to nursing and midwifery students: mixed method study. *Future of Med Educ J*. 2017;7(1):14-8. doi: [10.22038/fmej.2017.8552](https://doi.org/10.22038/fmej.2017.8552).
- Valizadeh Haghi H, Zandian H, Molaee S, Azaripour F. Evaluation of the logbook of the department of operative dentistry in Ardabil University of Medical Sciences at 2019 from students' point of view. *Horizons of Medical Education Development*. 2020;11(3):58-45. doi: [10.22038/hmed.2020.49839.1044](https://doi.org/10.22038/hmed.2020.49839.1044). [Persian].
- Jasemi M, Ahangarzadeh Rezae S, Hemmati M, Madadipoor N, Cheraghi R. Evaluation of the effect of evaluation using the direct observation skills (DOPS) and traditional methods on nursing students' clinical skills learning, 2016. *Razi J Med Sci*. 2019;25(10):1-9. [Persian].
- Bindal N, Goodyear H, Bindal T, Wall D. DOPS assessment: a study to evaluate the experience and opinions of trainees and assessors. *Med Teach*. 2013;35(6):e1230-4. doi: [10.3109/0142159x.2012.746447](https://doi.org/10.3109/0142159x.2012.746447).
- Hengameh H, Afsaneh R, Morteza K, Hosein M, Marjan SM, Abbas E. The effect of applying direct observation of procedural skills (DOPS) on nursing students' clinical skills: a randomized clinical trial. *Glob J Health Sci*. 2015;7(7 Spec No):17-21. doi: [10.5539/gjhs.v7n7p17](https://doi.org/10.5539/gjhs.v7n7p17).
- Golmakani N, Yousefzadeh S. The midwifery students' perspective about clinical evaluation based on logbook. *J Res Dev Nurs Midwifery*. 2012;9(1):103-11. [Persian].
- Roshangar F, Lotfi M, Zamanzadeh V, Abdollahzadeh F, Davoodi A. The effect of using logbook on nursing students' learning. *Iran J Med Educ*. 2010;10(1):64-70. [Persian].
- Asgari H, Ashoorion V, Ehsanpour S. Teaching and evaluation of field training course for health services management undergraduates: conventional and logbook methods. *Iran J Med Educ*. 2016;16(0):552-60. [Persian].
- Offergeld C, Neudert M, Zahnert T, Fischer M, Günther J, Giesler M. [Use and acceptance of the ORL logbook for final year students in German university and academic teaching hospitals]. *HNO*. 2020;68(4):248-56. doi: [10.1007/s00106-019-00744-9](https://doi.org/10.1007/s00106-019-00744-9). [German].
- Aghaeimaybodi F, Marvasti Nia G. Assessment of the strengths and weaknesses of the logbook to evaluation students' clinical competencies: a review study. *Beyhagh*. 2020;25(1):57-40. [Persian].
- Bourbonnais FF, Langford S, Giannantonio L. Development of a clinical evaluation tool for baccalaureate nursing students. *Nurse Educ Pract*. 2008;8(1):62-71. doi: [10.1016/j.nepr.2007.06.005](https://doi.org/10.1016/j.nepr.2007.06.005).
- Farahmand S, Asl Soleymani H. How interns' logbook is completed in emergency ward of Imam Khomeini hospital? *Iran J Med Educ*. 2010;10(1):55-63. [Persian].
- Movaffaghi Z, Shoeibi A, Bahari A, Khajedaluae M. The

- efficiency of medical extern's logbook from the viewpoints of externs and faculties of Mashhad University of Medical Sciences: an integration of qualitative and quantitative methods. *Iran J Med Educ.* 2014;13(11):950-9. [Persian].
25. Bagheri M, Sadeghnezhad M, Sayyadee T, Hajiabadi F. The effect of direct observation of procedural skills (DOPS) evaluation method on learning clinical skills among emergency medicine students. *Iran J Med Educ.* 2014;13(12):1073-81. [Persian].
26. Habibi H, Khaghanizade M, Mahmoodi H, Ebadi A, Seyedmazhari M. Comparison of the effects of modern assessment methods (DOPS and Mini-CEX) with traditional method on nursing students' clinical skills: a randomized trial. *Iran J Med Educ.* 2013;13(5):364-72. [Persian].

**Cite this article as:** Mehranfard S, Pelarak F, Mashalchi H, Kalani L, Masoudiyekta L. Efficacy of logbook as a clinical assessment: Using DOPS evaluation method. *Journal of Multidisciplinary Care.* 2022;11(4):184-189. doi: 10.34172/jmdc.2022.62.