

A Study on Students Perspective towards Introduction of OSPE as A Formative Assessment Tool in II MBBS Pharmacology Practical Examination

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Abstract:

Background: OSPE is a new assessment tool to assess the students in pre and para clinical subjects and very few colleges have incorporated OSPE in their curriculum.

Aim and Objective: This study was conducted to study the students perspective towards OSPE as a tool of assessment in the Pharmacology practical examination.

Materials and Methods: This study was done on 150 medical students of V semester attending pharmacology classes. The students were divided into 6 groups of 25 each and practical examination was conducted for 3 days by conventional method from 10 A.M to 12 P.M. and 2 P.M. to 4 P.M. The students were given a break for 3 days. The students were briefed about OSPE one day before the examination, then another examination was conducted by OSPE method for the next 3 days from 9 A.M to 12.P.M.. At the end of each day a common questionnaire was given to the students to assess their perspective towards OSPE by using a standardized Likert scale and their feedback was taken for analysis and tabulation.

Results: Regarding OSPE it was noticed that 48.7% strongly agreed and 47.3% agreed that it can be used as an assessment tool in practical examination. 52.7% of students strongly agreed that the questions on OSPE were clear. 56% of students strongly agreed that bias is eliminated and 50.7% felt that the time given to complete each station was sufficient.

Conclusion: OSPE can be incorporated as an additional tool of assessment in Conventional practical examination.

Keywords: Likert scale, Medical students, OSPE, Pharmacology, Stations.

I. Introduction

In medical colleges the students assessment has always been a topic of debate. To assess the skills, the conventional methods are not only subjective in nature, but lack scope of direct observation of the performance of skills of the students. Intake of large number of students to medical colleges makes evaluation of students a complex process. There are many lacunae in the conventional method of practical examination. There is variation in scoring due to subjective method of awarding marks by different examiners. Problems in communication, variability in the experiments selected, gender bias are a few factors which can affect the grading of the students in a conventional examination and also the individual competencies cannot be judged in this setting. Various attempts have been made to bring the practical examination towards objectivity so that they may become more reliable and valid. Therefore adoption of a valid method of examination is a necessity. So we want to introduce OSPE as an additional tool of assessment of students in practical examination.

To overcome these limitations objective structured practical examination (OSPE)⁽¹⁾ which is a modified version of objective structured clinical examination (OSCE) has been introduced. This study was planned to evaluate OSPE as a tool for assessment of practical skills in the undergraduate pharmacology curriculum. OSCE was described in 1975 by Harden et al⁽²⁾ at the Dundee university, for assessment in clinical subject, which has been an useful tool in this regard. OSPE, a modified form of OSCE has been proposed by MCI, guides in assessing the students of their knowledge, comprehension and psychomotor skills. It has also been found to be

reliable, valid and objective tool for assessing the students and also eliminates examiners bias⁽³⁾ It teaches the essential skills that will help the students to select the medicines safely and effectively throughout their professional life.⁽⁴⁾ The quality of therapeutic reasoning and prescribing skills have to be stressed and currently these skills are inadequate.

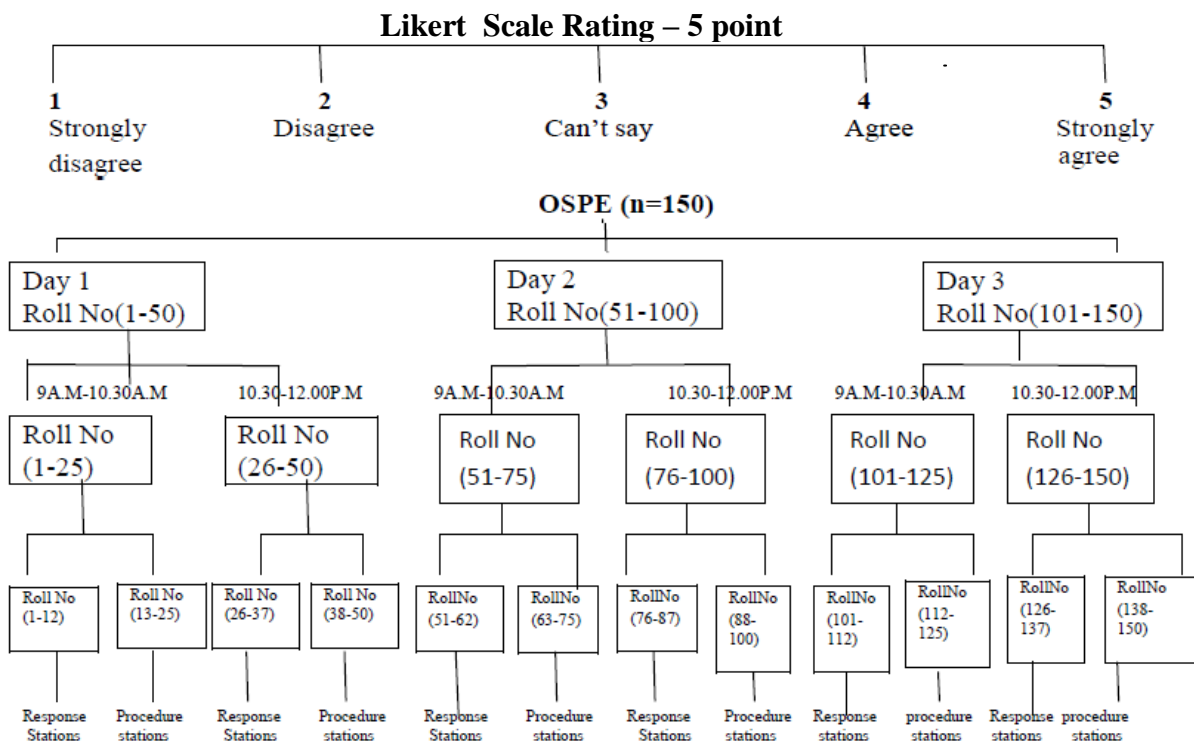
Different modifications of OSCE are as follows⁽⁵⁾

- 1.OSCER-Objective Structured Long Examination Record.
- 2.OSPE- Objective Structured Practical Examination.
- 3.OSVE- Objective Structured Video Examination.
- 4.OSTE- Objective Structured Teaching Evaluation.
- 5.OSPRE-Objective Structured Performance Related Examination.
- 6.OSSE-Objective Structured Selection Exam.

II. Materials And Methods

This study was carried out in the Department of Pharmacology, Sri Venkateswara Medical College, Tirupati. The study subjects were fifth semester medical students (n=150). The students were divided into 6 groups of 25 each and practical examination was conducted for 3 days by conventional method from 10 A.M to 12 P.M. and 2 P.M. to 4 P.M. The students were given a break for 3 days. As the OSPE was conducted for the first time, the students were notified four weeks in advance regarding the plan for conducting the OSPE. Approval from the Institutional Research Committee was obtained before the start of the study. Informed consent was obtained from the students explaining the whole procedure. Detailed information regarding the OSPE, number of stations and time for each station and conduct of examination was displayed. They were briefed about OSPE one day before the examination, then another examination was conducted by OSPE method for the next 3 days from 9 A.M to 12.P.M. for same group of students.

Total numbers of stations were 20. Out of it 10 were response (unobserved) stations⁽⁶⁾ and 10 were procedure (observed) stations. Group A (12students) completed 10 response stations and 5 minutes⁽⁷⁾ was allotted to each station. Group B (13 students) completed the 10 procedure stations and a checklist was given to 10 faculty members(one at each station)and five minutes was allotted for each station.⁽⁸⁾ After the group A/B complete their stations, they were exchanged. Same procedure was repeated for the next two days. At the end of each day, a questionnaire was given to the students to assess their perspective towards OSPE by using a standard Likert Scale⁽⁹⁾ and their feedback was taken for analysis and tabulation.



Examples of Response (Unobserved) Stations:

1. A young boy of 18 years comes to a General Practitioner complaining of rhinorrhoea and incessant episodes of sneezing especially after exposure to dusty atmosphere. He was prescribed tab.Diphenhydramine 25mg tid.

Task: carefully read the scenario and answer the questions.

- a) Give your justification for selection of this drug?
- b) What are the drawbacks of this group of drugs?
- c) What are the other uses of this group of drugs?

2. Write the English meaning of the following

Latin term	Abbreviation	English meaning
Recipe	Rx	
Ante cibum	a.c	
Post cibum	p.c	
Bis in die	b.i.d	
Ter in die	t.i.d	
Quaque hora	q.h	
Si opus sit	s.o.s	
Statim	Stat	
Quaque quarte hora	q.q.h	
Hora somni	h.s	
Ter die sumendum	t.d.s	

3. A young female comes to antenatal department with H/O fatigue, palpitations and breathlessness while carrying out household chores. Examination reveals pallor of conjunctiva while blood picture shows Hb 8g/dl with microcytosis and hypochromia. She was diagnosed with iron deficiency anemia.

Task:

- a) Which group of drugs are preferred? What salts are available?
- b) What would be your P-drug for the patient?
- c) Mention the duration of treatment?

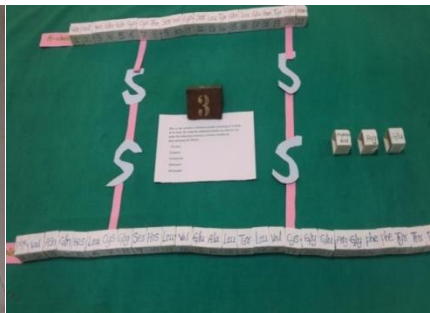
4. In the casualty you are called to suture a long scalp wound. You use 7ml of 1% Lignocaine to infiltrate the area locally. How many mg of lignocaine has the patient received?

Examples of Procedure (Observed) Stations:

1. Demonstration of I.V route



2. Structure of Insulin



3. Demonstration of various sites of transdermal patches



4. Matching of antidotes of various poisonings and drug of choice in worm infestations

In these stations, Knowledge was assessed in response stations. Affective domain was assessed by asking them to give instructions to the patients with regard to use of certain drugs and instruments. Psychomotor domain was assessed by asking them to perform certain procedure.

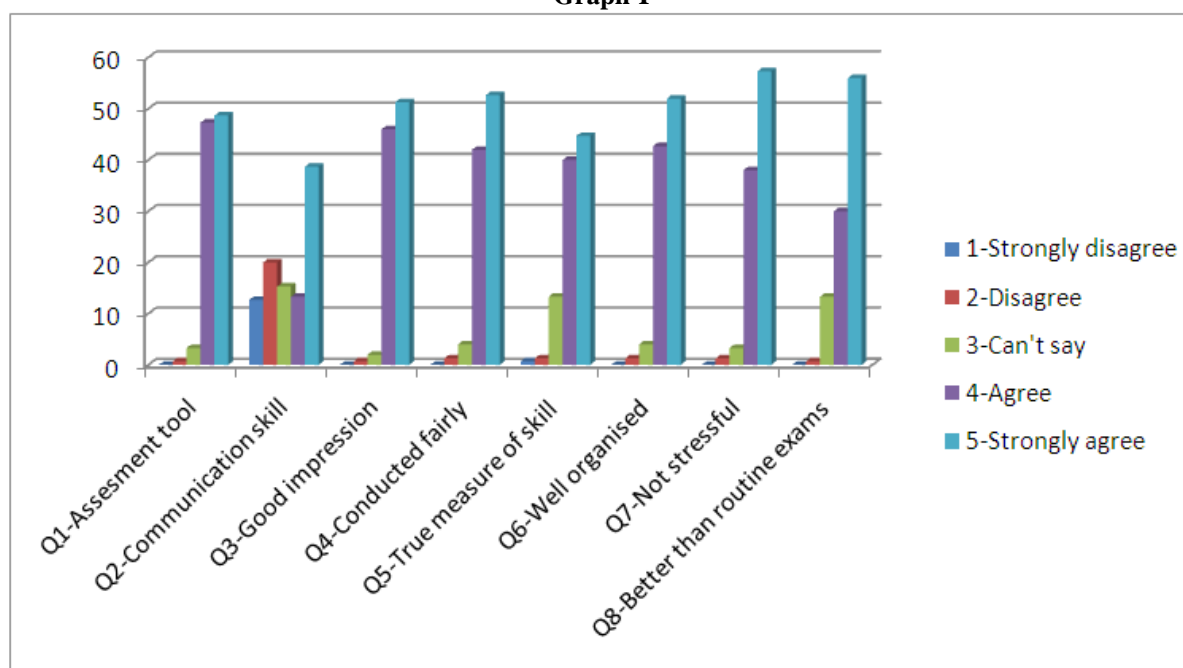
III. Results

Responses from all the participants (n=150) to the questionnaire were analyzed and the data has been interpreted using Likert scale (Grades 1-5).

Table-I OSPE

Likert scale	1-Strongly disagree	2-Disagree	3-Can't say	4-Agree	5-Strongly agree
Q1-Assesment tool	0	0.7	3.3	47.3	48.7
Q2-Communication skill	12.7	20	15.3	13.3	38.7
Q3-Good impression	0	0.7	2	46	51.3
Q4-Conducted fairly	0	1.3	4	42	52.7
Q5-True measure of skill	0.7	1.3	13.3	40	44.7
Q6-Well organized	0	1.3	4	42.7	52
Q7-Not stressful	0	1.3	3.3	38	57.3
Q8-Better than conventional exams	0	0.7	13.3	30	56

Graph-I

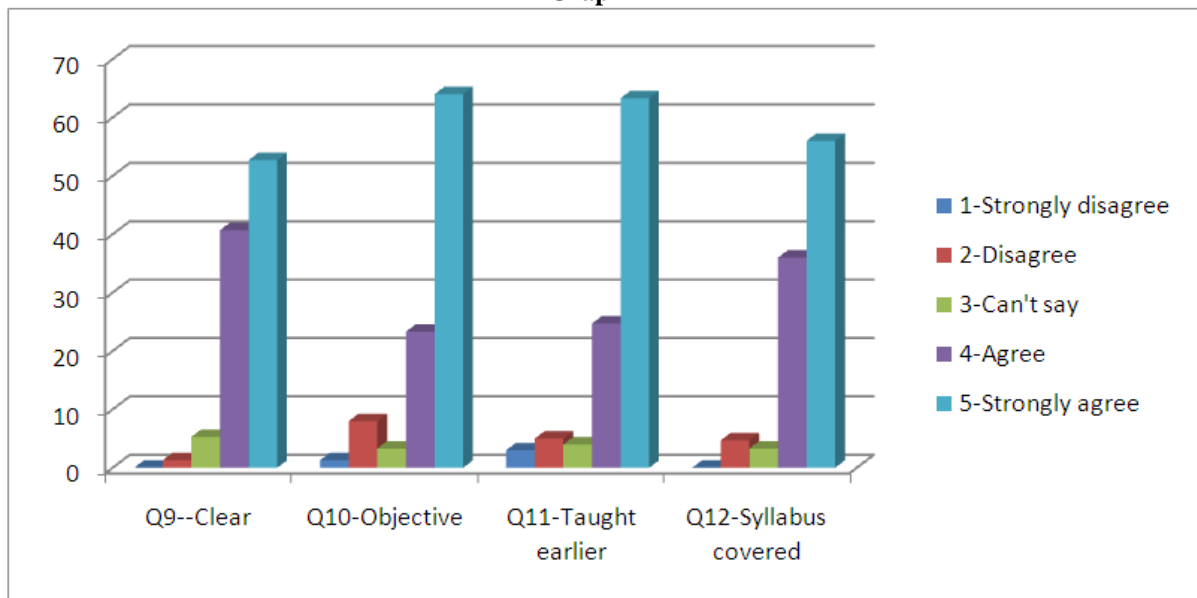


Regarding OSPE it was noticed that 48.7% strongly agreed and 47.3% agreed that OSPE can be used as an assessment tool in practical exams. At the same time 38.7% strongly agreed that communication skill was developed in OSPE. The general impression about OSPE as good was strongly agreed by 51.3% and 52.7% strongly agreed that the exam was conducted fairly. 44.7% strongly agreed it as a true measure of essential skills in pharmacology. 52% of students strongly agreed that exam was well organized and 57.3% of them strongly agreed that the exam was not at all stressful. Over all 56% of students strongly agreed that OSPE was better than the traditional examination (GRAPH-I)

Table- II- OSPE Questions

Likert scale	1-Strongly disagree	2-Disagree	3-Can't say	4-Agree	5-Strongly agree
Q9--Clear	0	1.3	5.3	40.7	52.7
Q10-Objective	1.3	8	3.3	23.3	64
Q11-Taught earlier	3	5	4	24.7	63.3
Q12-Syllabus covered	0	4.7	3.3	36	56

Graph-II

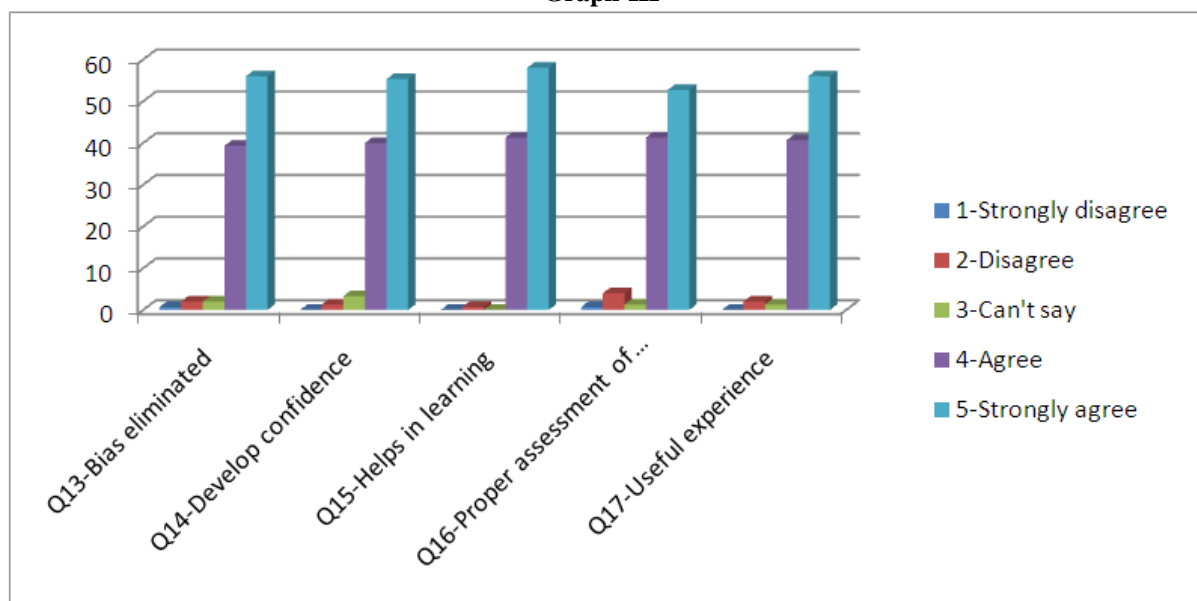


The view in relation to the questions on OSPE 52.7% of students strongly agreed that the questions were clear and 52% of students strongly agreed that they were objective and 38% students strongly agreed that the topics were taught earlier and 46% strongly agreed that the topics in both observed and unobserved stations were covered earlier.(GRAPH -II)

Table- III- Usefulness Of OSPE

	1-Strongly disagree	2-Disagree	3-Can't say	4-Agree	5-Strongly agree
Q13-Bias eliminated	0.7	2	2	39.3	56
Q14-Develop confidence	0	1.3	3.3	40	55.3
Q15-Helps in learning	0	0.7	0	41.3	58
Q16-Proper assessment of skills	0.7	4	1.3	41.3	52.7
Q17-Useful experience	0	2	1.3	40.7	56

Graph-III

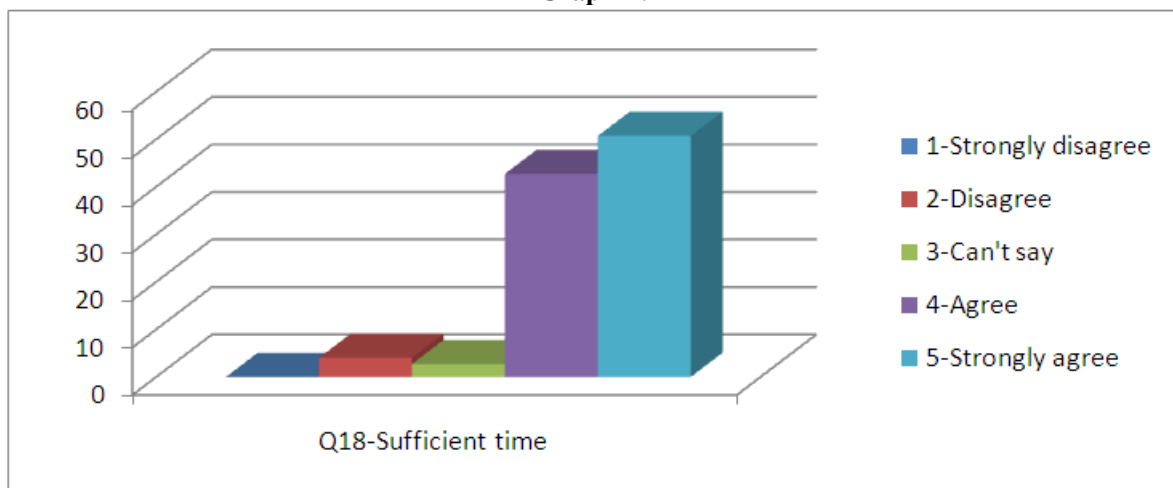


From this study it is evident that not only the faculty but 46% of the students also strongly agreed that bias can be eliminated and the assessment of students can be uniform unlike the conventional method. 55.3% of students strongly agreed that OSPE helps to develop confidence over the subject. 58% strongly agreed that OSPE helped the students in learning pharmacology better than the routine practical methods. Not only the faculty but 44.7% of the students also strongly agreed that OSPE is a proper tool for the assessment of skills of them. At the end 56% of students strongly agreed that OSPE was an useful experience for them to come up in their academic programmes (GRAPH-III).

Table- IV -Time

	1-Strongly disagree	2-Disagree	3-Can't say	4-Agree	5-Strongly agree
Q18-Sufficient time	0	4	2.7	42.7	50.7

Graph-IV



When the opinion on time regarding conducting OSPE was taken from students, 50.7% students strongly agreed that time given to complete each station was sufficient and 54% students strongly disagreed for giving more time than allotted.(GRAPH-IV)

IV. Discussion

Recent studies on doctors have shown that new generation doctors are not well prepared to meet the expectations of the society. In developed countries, a number of initiatives have been introduced to strengthen and improve medical education. Changes in assessment often lag behind changes in curriculum and learning. So this study was done mainly to overcome the lacunae in routine practical exams. OSPE is considered as a gold standard for assessing pre clinical laboratory skills. In this study, students gave their feedback about OSPE as an assessment tool by responding to a questionnaire. It appears to be a reliable device with a good capacity for discriminating between different categories of students. It is important to ensure that tests used for assessment meet the educational goals and are able to evaluate competence levels of the students. As the questions asked were also objective we can reduce the examiner's variability in students score. Checklist⁽¹⁰⁾ were also provided to the examiners.

The present study was conducted to study the students perspective towards OSPE as a tool to assess them in the Pharmacology practical examination. The assessment influences the learning of the students. It is important that the student is evaluated at all levels in all domains. OSPE is used in many universities as an assessment tool and it is necessary to take the feedback of the students before it is introduced as part of their examination. A large majority of the students perceived the assessment by OSPE as unbiased because all the students were given the same exercises. Examiner variability in students score is also reduced as the questions were all objective. Students also felt that the OSPE was fair.

Many students in India are not fluent in English, and therefore even a knowledgeable student is often unable to reply satisfactorily to the examiners queries. Due to this reason the students score more marks who can communicate English fluently than those who cannot. This problem can be overcome by OSPE as the questionnaire in it is only objective and it does not require fluent English.

Majority of the students felt that their knowledge and skills were assessed in a short period of time and it was less stressful compared to the conventional method of examination where it is purely subjective and time

consuming. In accordance with the studies conducted elsewhere, many students felt that OSPE is better than the conventional examination and their perspective towards OSPE was positive.

V. Conclusion

OSPE requires extensive planning and team work but it has to be implemented as this has many advantages.

1. Objectivity.
2. Tests individual competencies.
3. Assesses wide area of knowledge and skills of a large number of students in a short period of time.
4. Minimal examiner variability.

The university authorities should consider the views of faculty and students regarding OSPE as majority of students opined that it is a very useful tool of assessment so there is a need to further incorporate OSPE in conventional practical examination.

There are also some limitations of OSPE as

1. Observer's fatigue.
2. Equal time is not required for all stations -Some stations need lesser time.
3. Careful organization –requires extensive planning and teamwork.

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