

ORIGINAL ARTICLE

Validity and Reliability of Persian Version of Evaluation and Feedback for Effective Clinical Education Questionnaire in Occupational Therapy Education in Iran

صحة وموثوقية النسخة الفارسية من التقييم والتغذية الراجعة لاستبيان التعليم السريري الفعال في تعليم العلاج المهني في إيران

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Background: Clinical education plays a vital role in the clinical activities of graduates; therefore, the evaluation of educational services through appropriate tools paves the way for promoting learners' skills. The present study was conducted to translate the Evaluation and Feedback for Effective Clinical Education (EFFECT) questionnaire from English into Persian and assess the validity and reliability of the translated version.

Method: Initially, the EFFECT questionnaire was translated from English into Persian based on the International Quality of life Assessment (IQOLA). To quantitatively determine the face validity of the translated questionnaire, it was evaluated by 22 occupational therapy students. To quantitatively evaluate the content validity of the questionnaire, the content validity ratio (CVR) and the content validity index (CVI) were used (11 occupational therapy educators). To assess internal consistency, ninety-four occupational therapy students completed the translated EFFECT questionnaire. To measure test-retest reliability, 35 occupational therapy students filled out the translated questionnaire again after two weeks interval.

Results: The EFFECT scores of the items ranged from 3.95 to 4.77, all of which were at an acceptable level. The CVR scores of 48 items (necessity) were higher than 0.59. Fifty-one items obtained CVI scores more than 0.79 (clarity). The test-retest reliability values were in the range of 0.75 to 0.91. The results indicated moderate reliability for the domain of educator characteristics and very high reliability for other domains of the questionnaire. The values of Cronbach's alpha varied from 0.84 to 0.94. The total value of Cronbach's alpha was 0.98.

Conclusion: The Persian version of the EFFECT questionnaire has good validity and reliability and can be employed to assess the quality of clinical education in occupational therapy.

Keywords: Clinical Education, Questionnaire, Validity, Reliability, Occupational Therapy

الخلفية: يلعب التعليم السريري دوراً حيوياً في الأنشطة السريرية للخريجين. لذلك، فإن تقييم الخدمات التعليمية من خلال الأدوات المناسبة يمهّد الطريق لتعزيز مهارات المتعلمين. أجريت الدراسة الحالية لترجمة استبيان التقييم والتغذية الراجعة للتعليم السريري الفعال (EFFECT) من الإنجليزية إلى الفارسية وتقييم صحة وموثوقية النسخة المترجمة.

الطريقة: في البداية، تمت ترجمة استبيان التأثير من الإنجليزية إلى الفارسية بناءً على تقييم جودة الحياة الدولي (IQOLA). ولتحديد صلاحية الوجه من الناحية الكمية للاستبيان المترجم، تم تقييمه من قبل ٢٢ طالباً من طلاب العلاج الوظيفي. لتقييم صدق محتوى الاستبيان كميًا، تم استخدام نسبة صحة المحتوى (CVR) ومؤشر صدق المحتوى (CVI) (١١ معلماً للعلاج المهني). لتقييم الاتساق الداخلي، اكتمل أربعة وتسعون طالباً من طلاب العلاج المهني استبيان التأثير المترجم. لقياس موثوقية الاختبار وإعادة الاختبار، قام ٣٥ طالباً من طلاب العلاج المهني بملاء الاستبيان المترجم مرة أخرى بعد فترة أسبوعين.

النتائج: تراوحت درجات تأثير العناصر من ٣.٩٥ إلى ٤.٧٧، وكلها كانت بمستوى مقبول. كانت درجات CVR لـ ٤٨ عنصراً (ضرورة) أعلى من ٠.٥٩. حصل واحد وخمسون عنصراً على درجات CVI أكثر من ٠.٧٩ (الوضوح). تراوحت قيم موثوقية الاختبار-إعادة الاختبار من ٠.٧٥ إلى ٠.٩١. أشارت النتائج إلى موثوقية معتدلة في مجال خصائص المعلم وموثوقية عالية جداً لمجالات أخرى من الاستبيان. تفاوتت قيم ألفا كرونباخ من ٠.٨٤ إلى ٠.٩٤. كانت القيمة الإجمالية لألفا كرونباخ ٠.٩٨.

الخلاصة: النسخة الفارسية من استبيان التأثير تتمتع بصلاحية وموثوقية جيدة ويمكن استخدامها لتقييم جودة التعليم السريري في العلاج المهني.

الكلمات المفتاحية: التعليم السريري، الاستبيان، المصداقية، الموثوقية، العلاج الوظيفي

ایران میں پیشہ ورانہ علاج کی تعلیم میں مؤثر طبی تعلیم کے سوالنامے کے لیے تشخیص اور تاثرات کے فارسی ورژن کی درستگی اور اعتبار

پس منظر: طبی تعلیم گریجویٹس کی طبی سرگرمیوں میں اہم کردار ادا کرتی ہے۔ لہذا، مناسب ٹولز کے ذریعے تعلیمی خدمات کی تشخیصی سیکھنے والوں کی مہارتوں کو فروغ دینے کی راہ ہموار کرتی ہے۔ موجودہ مطالعہ (EFFECT) سوالنامے کا انگریزی سے فارسی میں ترجمہ کرنے اور ترجمہ شدہ ورژن کی درستگی اور وشوسنیت کا جائزہ لینے کے لیے کیا گیا تھا۔

طریقہ: ابتدائی طور پر، EFFECT سوالنامے کا انگریزی سے فارسی میں ترجمہ کیا گیا جس کی بنیاد پر بین الاقوامی معیار زندگی کی تشخیص (IQOLA) تھی۔ ترجمہ شدہ سوالنامے کے چہرے کی درستگی کو مقداری طور پر تعین کرنے کے لیے، اس کا اندازہ ٢٢ پیشہ ورانہ تھراپی کے طلباء نے کیا۔ سوالنامے کے مواد کی درستگی کو مقداری طور پر جانچنے کے لیے، مواد کی درستگی کا تناسب (CVR) اور مواد کی درستگی کا اشاریہ (CVI) استعمال کیا گیا (١١ پیشہ ورانہ تھراپی کے معلمین)۔ اندرونی مستقل مزاجی کا اندازہ لگانے کے لیے، چورائے پیشہ ورانہ تھراپی کے طلباء نے ترجمہ شدہ EFFECT سوالنامہ مکمل کیا۔ ٹیسٹ کے دوبارہ ٹیسٹ کی وشوسنیت کا پیمائش کرنے کے لیے، ٣٥ پیشہ ورانہ تھراپی طلباء نے دو ہفتوں کے وقفے کے بعد دوبارہ ترجمہ شدہ سوالنامہ پُر کیا۔

نتائج: اٹمنز کے EFFECT سکور ٣.٩٥ سے ٤.٧٧ تک تھے، یہ سبھی قابل قبول سطح پر تھے۔ ٤٨ اشیاء (ضرورت) کے CVR سکور ٠.٥٩ سے زیادہ تھے۔ اکیاون اشیاء نے ٠.٧٩ (وضاحت) سے زیادہ CVI سکور حاصل کیے۔ ٹیسٹ کی دوبارہ جانچ کی قابل اعتماد قدریں ٠.٧٥ سے ٠.٩١ کی حد میں تھیں۔ نتائج نے معلم کی خصوصیات کے ڈومین کے لیے اعتدال پسندی اور سوالنامے کے دیگر ڈومینز کے لیے بہت زیادہ قابل اعتماد ہونے کی نشاندہی کی۔ کرونباخ کے الفا کی قدریں ٠.٨٤ سے ٠.٩٤ تک مختلف تھیں۔ Cronbach کے الفا کی کل قیمت ٠.٩٨ تھی۔

نتیجہ: EFFECT سوالنامے کا فارسی ورژن اچھی درستگی اور قابل اعتماد ہے اور اسے پیشہ ورانہ تھراپی میں طبی تعلیم کے معیار کا جائزہ لینے کے لیے استعمال کیا جا سکتا ہے۔

کلیدی الفاظ: طبی تعلیم، سوالنامہ، درستگی، قابل اعتماد، پیشہ ورانہ علاج

بررسی روایی و پایایی نسخه فارسی شده پرسشنامه ارزشیابی و بازخورد برای آموزش بالینی مؤثر

زمینه و هدف: با توجه به اینکه آموزش بالینی نقش مهمی در فعالیت بالینی دانشجویان پس از فارغ التحصیلی دارد، ارزیابی خدمات آموزشی به بهبود مهارت های یادگیرندگان کمک می کند. هدف از انجام این مطالعه، ترجمه پرسشنامه ارزشیابی و بازخورد از انگلیسی به فارسی در راستای آموزش بالینی مؤثر و بررسی روایی و پایایی نسخه فارسی پرسشنامه می باشد.

روش: پرسشنامه EFFECT طبق پروتکل ارزیابی بین المللی کیفیت زندگی (IQOLA) از انگلیسی به فارسی ترجمه شد. جهت بررسی کمی روایی صورتی نسخه ترجمه شده پرسشنامه، ٢٢ دانشجوی کاردرمانی آن را مورد ارزیابی قرار دادند. جهت بررسی کمی روایی محتوایی، از شاخص و نسبت روایی محتوایی استفاده شد (١١ مربی کاردرمانی). جهت ارزیابی همخوانی درونی آیتم ها، ٩٤ دانشجوی کاردرمانی پرسشنامه ترجمه شده را تکمیل کردند. جهت بررسی پایایی آزمون - باز آزمون، ٣٥ دانشجوی کاردرمانی پرسشنامه را مجدداً پس از دو هفته پر کردند.

یافته ها: شاخص امتیاز تأثیر آیتم ها ٣/٧٧ تا ٣/٩٥ به دست آمد که همگی در محدوده قابل قبول هستند. نسبت روایی محتوایی (ضرورت) ٤٨ مورد بالاتر از ٠/٥٩ بود. ٥١ مورد نمره نسبت روایی محتوایی (وضوح) بالاتر از ٠/٧٩ به دست آوردند. همبستگی آزمون - بازآزمون در بازه ٠/٩١ تا ٠/٧٥ به دست آمد. نتایج حاکی از پایایی متوسط در بخش ویژگی های مربی و پایایی بسیار مطلوب در سایر بخش های این پرسشنامه است. آلفای کرونباخ در بازه ٠/٩٤ تا ٠/٨٤ به دست آمد. میزان آلفای کرونباخ به صورت کل ٠/٩٨. محاسبه گردید.

نتیجه گیری: نسخه فارسی پرسشنامه EFFECT در کاردرمانی از روایی و پایایی خوبی برخوردار می باشد و می تواند به عنوان یک ابزار مناسب جهت ارزیابی کیفیت آموزش بالینی مورد استفاده قرار گیرد.

واژه های کلیدی: آموزش بالینی، پرسشنامه، روایی، پایایی، کاردرمانی

INTRODUCTION

Clinical education is an essential component of medical education. Occupational therapy is no exception when it comes to education (1). Similar to other majors of Medical Sciences, occupational therapy is a thoroughly practical and clinical vocation (2) and occupational therapy students should acquire a wide range of essential knowledge, skills, and clinical competency through clinical education programs to commence their professional career (1, 2). Fieldwork is an integral part of clinical education programs, especially, occupational therapy education programs, and plays a critical role in transferring and generalizing the acquired theoretical concepts to clinical practice in clinical settings. Since clinical education has a substantial impact on the clinical activities of graduates, the assessment of educational services contributes to improving the quality of educational activities and enhancing learners' skills (1).

Clinical educators have a fundamental role in promoting students' clinical experiences in clinical fieldwork and are considered as a key factor in creating favorable conditions for achieving the goals of clinical education. Educators are able to compensate for the deficiencies in educational facilities. On the other hand, they can turn optimal learning environments into unpleasant environments due to their inability to establish a strong relationship with their students or their incompetence in (non) technical knowledge and/or skills. As a result, they exert a large influence on the quantity and quality of students' learning and achievement (3, 4). Since clinical educators play the most important role in transferring theoretical knowledge into practical practice (5) and the complexity of the learning process highly depends on the type of experience that students gain in clinical environments, modifying and improving the components that are effective in enhancing the education quality of clinical educators is one of the major objectives of educational centers (6).

Thomson et al (2002) in a study about the competencies for midwifery teachers indicated that, for educators to master teaching skills in different learning environments, including clinical learning environments, it is required to align learning principles with teaching principles; to put it in other terms, knowing when to use direct, supportive, or coaching methods considering learning principles elevates teaching effectiveness irrespective of learners' major (7).

One of the beneficial ways to improve educators' clinical education quality is to provide them with constructive feedback on their teaching skills (8). Using the instruments and methods that efficiently evaluate the quality of their clinical education and offer effective feedback can help promote clinical education quality (9). Although a majority of tools measuring educators' clinical education quality assess fundamental domains, such as teaching quality, role modeling, personal support, feedback, and other related elements that have been emphasized in various studies (9, 10), most of them are primarily utilized for education in inpatient hospitals. Moreover, as many of these instruments are tailored to particular technical fields and the teaching skills required in different outpatient and inpatient settings

may vary, the generalizability of these instruments is in question (11). The EFFECT questionnaire is a comprehensive tool that can be used in various inpatient and outpatient clinics as well as other fields associated with medical sciences (8, 9, 11, 12). The validated questionnaire EFFECT is based on theories of workplace learning and clinical teaching and incorporates CanMEDS (Canadian Medical Education directives for Specialists) competences (11). The EFFECT contains 58 items grouped to 7 domains of clinical teaching: (1) role modeling, (2) task allocation, (3) planning, (4) feedback, (5) teaching methodology, (6) personal support, and (7) assessment. The role modeling domain contains 4 subdomains such as clinical skills, CanMEDS competencies, academic research, and reflection, and the feedback domain contains 2 subdomains such as process and content. The items were scored on a six-point Likert scale (1, very poor; 2, poor; 3, intermediate; 4, satisfactory; 5, good; 6, excellent; and not (yet) able to evaluate) (13, 14). The option "not (yet) able to evaluate" was chosen a specific item did not (yet) occur during clinical teaching. Prior to analysis of study results, the Lithuanian version of the EFFECT questionnaire was validated (15). Therefore, this study aimed to translate the EFFECT questionnaire and evaluate its validity and reliability with respect to occupational therapy educators in Iran.

METHODS

The present study is methodological, meaning that it examines the psychometric properties of an instrument analytically and descriptively. In this study, the Persian version of the EFFECT questionnaire was assessed in terms of internal consistency, test-retest reliability, content validity, and face validity with respect to occupational therapy educators.

Data Collection Procedure

Initially, the present researchers contacted the developer of this questionnaire (Dr. Cornelia Fluit) via email to gain permission to measure the validity of this tool in Iran. After the permission was given and the code of ethics was received from Iran University of Medical Science (IR.IUMS.REC.1398.1008), the process of data collection commenced.

The following steps were taken to translate the instrument and measure its psychometric properties:

Translation

In the process of translation, the International Quality of Life Assessment (IQOLA) protocol was applied for cultural adaptation. To be precise, the questionnaire was translated into Persian by two translators, and then the Persian version of the questionnaire was collaboratively assessed by them. Afterward, the Persian version was re-translated into English by another two translators. It is worth mentioning that one of these translators was an English native speaker with sufficient proficiency in Persian. After the primary review of the original, translated, and re-translated versions of the questionnaire in a meeting (4 Faculty members of the occupational therapy department and 1 PhD student

participated in the panel with the aim of selecting a suitable and more expressive translation) some specialized corrections were replaced. The re-translated version of the questionnaire was sent to the developer for her appraisal. After the verification of the re-translated version of the questionnaire by the developer, the Persian version of the questionnaire was used for further analysis.

Validity

Face Validity: To qualitatively determine the validity of the Persian version of the questionnaire, it was evaluated in an expert panel being comprised of seven occupational therapy experts (six Ph.D. occupational therapists and one M.A. occupational therapy student). Moreover, the translated questionnaire was administered to 20 occupational therapy students who were in fieldwork level I and II. They were asked to construe the concept of the items and provide their perception. This phase was carried out in person, and one of the researchers made notes of the students' interpretation and misconceptions of the items. The students' points of view were considered in preparing the final Persian version of the questionnaire. After that, the face validity of the questionnaire was examined quantitatively. The translated questionnaire was administered online to other 34 occupational therapy students. 22 students (10 B.A. students, 9 M.A. students, and 3 Ph.D. students) filled out the questionnaire. Each participant evaluated each of the 55 items on a 5-point Likert scale. To obtain the EFFECT scores, the participants were asked to rate the importance of each item on a 5-point Likert scale ranging from 1 (not important at all) to 5 (very important). The EFFECT score of each item was determined based on the following scoring process: Very important (5 points), important (4 points), moderately important (3 points), slightly important (2 points), and not important at all (1 point).

Content validity: After the translation of the questionnaire into Persian, an expert panel was held to explore its content validity qualitatively. The Persian version of the questionnaire was discussed in three panels with four occupational therapy faculty members and one Ph.D. student, all were occupational therapy educators, and the required modifications were made to the questionnaire so as to clarify the items further. To investigate the content validity quantitatively, the tool was then given to 11 occupational therapy experts to assess the necessity and clarity of the translated items. The methods used to determine the necessity and clarity of the items were the content validity ratio (CVR) and the content validity index (CVI), respectively. In order to compute the CVI of the questionnaire, it was administered to 11 occupational therapy educators to complete the areas related to content validity, including the relevancy (specificity), clarity, and simplicity of each item. In the CVI questionnaire, these three criteria (simplicity, relevancy, and clarity) were separately measured on a 4-point Likert scale. The CVI values of these three criteria were calculated for all the items. To compute the CVR value, the CVR questionnaire was given to that same experts to rate the necessity of the items in the translated

questionnaire. The three-point Likert scale from 1 to 3 was utilized: not necessary (1), useful but not necessary (2), and necessary (3). Then, the CVR score was calculated via the following formula:

$$CVR = \frac{Ne - N/2}{N/2}$$

Reliability

Internal consistency: To assess the internal consistency of the translated questionnaire, 94 occupational therapy fieldwork students (fieldwork level I and II) were chosen based on simple non-probability sampling. These students completed the questionnaire about 23 occupational therapy educators. First, the students were informed about the purpose and procedure of the study and provided with instructions on how to answer the items. Then, the background form and the Persian version of the EFFECT questionnaire were given to them and were completed by them in the presence of the researcher when it was possible. **Test-retest reliability:** To assess reliability, two weeks later, 35 students of those 94 students completed the questionnaire again about 11 clinical educators.

Outcome measurement

EFFECT questionnaire

The EFFECT questionnaire was developed by Fluit et al. in 2012. To determine its validity and reliability, it was administered to 756 residents in the Netherlands. This tool aims at providing practical feedback to educators to improve the quality of clinical education. It is comprised of 58 items that assess clinical education in seven domains. Each domain of clinical education is scored based on a 6-point Likert scale in which 1 and 6 represent very poor and excellent levels of educators, respectively, in that domain. These seven domains of clinical education are as follows: role modeling with 15 items, task allocation with 5 items, planning with 3 items, providing feedback with 12 items, teaching methodology with 7 items, assessment with 8 items, and educator characteristics with 5 items. The questionnaire is filled out by residents and only takes 8 to 10 minutes to complete. It also covers approximately all aspects of education.

Ethics code and informed consent form:

The present study was proven in the ethics committee of Iran University of Medical Sciences with the ethics code of IR.IUMS.REC.1398.1008. The informed consent form was given to students before completing the questionnaire.

Data analysis

To analyze the obtained data, SPSS software (version 22) was used. Cronbach's alpha and the intraclass correlation coefficient (ICC) were utilized to measure the internal consistency of the items and test-retest reliability, respectively. Cronbach's alpha values of 0.8 or higher, between 0.7 and 0.8, between 0.6 and 0.7, between 0.5 and 0.6, and less than 0.5 were considered excellent, acceptable, questionable, weak, and unacceptable levels of reliability, respectively. The ICC values 0.8 or higher, between 0.6 and .79, and less than 0.6 reflect very satisfactory, moderate, and weak reliability, respectively (13).

RESULTS

Validity

Face validity:

The face validity of the questionnaire was evaluated qualitatively. As shown in Table 1, five items (items 15, 19, 26, 38, & 41) were modified. In item 15, 'is a leading example on how to perform patient-centered care' (*a leading guide* on how to perform activities related to patients/clients) changed to '*a good role model* on how to perform *activities related to patients/clients*.' Concerning item 19, 'gives me opportunity to discuss mistakes and incidents' was replaced by 'gives me opportunity to *confer on* mistakes and incidents (*events*).'. With respect to item 26, '*confers with me on* what I can *make progress in*' was substituted for 'discusses what I can improve' (converses with me what I can make progress in). Regarding item 38, 'discusses ethical issues with me' changed to '*confers with me on* ethical issues.' As for item 41, 'stimulates me to find out things for myself' was replaced with '*encourages me to discover some matters by* myself.'

The face validity of the questionnaire was also measured quantitatively. To determine the EFFECT scores, the participants (n=34) were asked to rate the importance of each item on a 5-point Likert scale from 1 (not important at all) to 5 (very important). To be exact, 1, 2, 3, 4, and 5

represent not important at all, slightly important, moderately important, important, and very important, respectively. Then, the EFFECT scores were calculated using the following formula:

Importance score \times frequency (percent) = EFFECT score

For an item to have a satisfactory level of face validity, its EFFECT score should not be lower than 1.5; in other words, the items whose scores were above 1.5 were acceptable (13). The EFFECT scores obtained for the items ranged from 3.95 to 4.77. The face validity of all the items was at an acceptable level as all of the scores were above 1.5.

Content validity:

Considering that 11 experts filled the CVR, the minimum acceptable CVR score equaled 0.59. The minimum acceptable CVI score under any condition is equal to 0.79. Based on the results, the CVR scores of 48 items were above 0.59. The CVR scores of items 10, 11, 14, 46, 50, 51, and 52 were less than 0.59, which indicates the unacceptable levels of necessity in these items. See appendix1. The clarity scores of 51 items were above 0.79. Items 11, 31, 51, and 52 were unacceptable as they did not receive the minimum acceptable CVI score.

Reliability

Internal consistency:

Table 1. Modifications made in EFFECT questionnaire

Item	Changes made based on students' comments	Final changes of expert panel
is a leading example on how to perform patient-centered care	is a good role model on how to perform activities related to patients/clients	is a leading guide on how to perform activities related to patients/clients
gives me opportunity to discuss mistakes and incidents	gives me opportunity to confer on mistakes and events	gives me opportunity to converse on mistakes and incidents (events)
discusses what I can improve	Confers with me on what I can make progress in.	converses with me on what I can make progress in
discusses ethical issues with me	confers with me on ethical issues	converses with me on ethical issues
Stimulates me to find out things for myself	Encourages me to discover some matters by myself.	Encourages me to discover some matters by myself.

Table 2. Internal Consistency and Test-Retest Reliability of different domains in EFFECT questionnaire

Questionnaire areas	Cronbach's alpha (α) (n=94)	Test-retest reliability(ICC) (n=35)	SEM
Role modeling	0.94	0.86	1.92
Provision of learning opportunities	0.84	0.86	2.12
planning	0.85	0.91	2.73
Providing feedback	0.94	0.85	1.86
Teaching skills	0.89	0.91	2.58
Educator characteristics	0.89	0.75	1.56
Assessment	0.93	0.80	1.98
EFFECT questionnaire	0.98	0.84	1.08

The Cronbach's alpha values obtained for the domains of role modeling, provision of learning opportunities, planning, providing feedback, teaching skills, educator characteristics, and assessment were 0.94, 0.84, 0.85, 0.94, 0.89, 0.89, and 0.93, respectively. These results reveal a very high degree of internal consistency in these domains. The overall Cronbach's alpha value was estimated to be 0.98, which shows very good internal consistency of the entire questionnaire.

The relationship between the test and retest scores of the EFFECT questionnaire in all the domains of the

DISCUSSION

Validity is defined as the extent to which the test realizes the purpose for which it was constructed. To put it in other terms, the test is considered to be valid if it is suitable for what it measures. The validity of a test refers to how effective the test measures the characteristic it is supposed to measure (14).

The EFFECT questionnaire was translated into Persian for the first time in the present study. The experts' opinions and the obtained results reflect the value of this questionnaire. The results revealed the high levels of agreement between the face validity in this questionnaire.

In this study, in order to evaluate the content validity of the questionnaire, the scientific views and comments of experts were considered. Based on the scores of the CVI and CVR, it can be claimed that the content validity of the EFFECT questionnaire was at a satisfactory level. The CVI scores of all items except for items 11 and 52 were acceptable. Those of items 31 and 51 were questionable, so, these items needed to be reviewed. Furthermore, 7 items had unacceptable CVR scores. Based on these results and the experts' comments, it can be declared that only 48 items had a favorable level of necessity and were essential items. The face validity of the items was qualitatively investigated through the VCI, and all the items received acceptable CVI scores. Analyzing the content validity of the Persian version of the EFFECT questionnaire qualitatively led to some modifications in the questionnaire, for example, in all the items, the words 'patient/client' were substituted for the word 'patient.' According to the experts in the panel, adding the word 'client' made it easier for the participants to comprehend the items. In item 15 (a leading example on how to perform patient-centered care), 'a leading example' was replaced by 'a good role model' so that the participants have a better understanding of the item. Similar changes were made to item 19 (gives me opportunity to confer on mistakes and incidents [events]). In addition, in this item, 'confer on' was substituted for 'discuss.' In item 26 (discusses what I can improve/ converses with me on what I can make progress in), 'discusses' was replaced by 'confer on.' Regarding item 36 (discusses ethical issues with me), the word 'discuss' was replaced by 'confer on' to enhance the participants' understanding. In item 39 (stimulates me to find out things for myself), 'things' was replaced by 'some matters.' All these modifications were made to augment the understanding of the items.

A tool with good repeatability as well as the process of educator evaluation can be applied in clinical settings since they have a satisfactory level of reliability.

The statistical tests used to measure test-retest reliability were the intraclass correlation coefficient (ICC) and the standard error of measurement (SEM). The results obtained from these statistical tests revealed a very high correlation between the test and retest scores with the ICC value of 0.84 and a SEM value of 1.08. Therefore, it can be declared that this questionnaire had a very favorable level of reliability.

One of the influential factors in increasing test-retest reliability is the provision of the same condition in both the test and retest phases. In the present study, the researchers did their best to provide the same condition in both test and retest phases.

At the time of data collection, most of the participants were in fieldwork level I and II in educational hospitals affiliated to Isfahan University of Medical Sciences and Iran University of Medical Sciences. In the test phase, it was easy to get access to them ($n=94$). However, in the retest phase, some of them were unavailable, so, the number of participants reduced to 35. Despite this decline in the number of participants, the test-retest reliability was at a desirable level ($ICC = 0.84$).

Internal consistency determines whether different items of an instrument measuring the same construct gain similar scores (14).

Few studies have been conducted on the validity and reliability of the EFFECT questionnaire. The EFFECT questionnaire was developed by Fluit et al. in 2012. In their study, this tool was completed by 746 medical residents in the Netherlands and its validity and reliability were assessed. The tool was reported to have good to excellent levels of construct validity. The Cronbach's alpha values ranged from 0.74 to 0.94. Nonetheless, test-retest reliability and interrater reliability were not evaluated. One of the advantages of the EFFECT questionnaire over other clinical education instruments is that it examines all aspects of clinical education (8).

In the current study, it was found that the EFFECT questionnaire had high internal consistency, which aligns with the results of the previous studies. For instance, Eglé Vaizgélienė et al. designed a study in 2017 to determine the psychometric characteristics of the EFFECT questionnaire. In their study, 146 educators were assessed by 182 residents via this instrument. The internal consistency values of various domains in this scale were in the range of 0.91 to 0.97. These results indicated that this scale had high internal consistency and a maximum level of construct validity (15).

To evaluate the internal consistency of the items in the Persian version of the EFFECT questionnaire, Cronbach's alpha was used. The Cronbach's alpha values in the domains of role modeling, task allocation, planning, providing feedback, teaching methodology, educator characteristics, and assessment were 0.94, 0.84, 0.85, 0.94, 0.89, 0.89, and 0.93, respectively, which highlights a very good level of internal consistency of these areas. The overall Cronbach's alpha value was 0.98, which confirms that the internal consistency of this questionnaire is very satisfactory.

In addition to assessing clinical education on a 6-point Likert

scale and being easy to implement, it evaluated the role of educators in the quality of clinical education.

One of the most important strengths of this study is the study of the validity and reliability of the questionnaire in the community of occupational therapists, which can compensate for the shortcomings related to the clinical evaluation of occupational therapy fieldwork educators.

One of the weaknesses of the study is the online completion of the questionnaires due to the pandemic situation of Corona viruses (Covid-19). It is suggested that the reliability of the EFFECT be examined among the educators of other medical sciences in Iran.

Clinical education substantially influences the occupational lives of students and the evaluation of clinical education and the provision of proper and constructive feedback to educators play a crucial role in facilitating the training process and improving the quality of education; therefore, it

is required to have a comprehensive questionnaire that thoroughly assesses clinical education at the lowest cost. In this vein, the present study prepared the Persian version of EFFECT questionnaire and assessed its validity and reliability. Based on the results of this study, it can be concluded that the Persian version of the EFFECT questionnaire can be utilized as a valid and reliable tool in the Iranian context.

Ethical Considerations

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors. The ethics committee of Iran University of Medical Sciences approved this research, ethics code IR.IUMS.REC.1398.1008

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Appendix 1. Content Validity Ratio (CVR) information

شماره سوال	گویه های های ابزار	جدول لاوشه امتیاز بر اساس	نتیجه
۱	از بیماران/مراجعان تاریخچه بگیرم	۰/۶۳	قابل قبول
۲	بیمار/مراجع را معاینه کنم	۰/۶۳	قابل قبول
۳	اقدامات بالینی را انجام دهم	۰/۶۳	قابل قبول
۴	در حین ارائه مراقبت از بیماران/مراجعان و بستگان او با سایر متخصصان بهداشتی همکاری کنم	۰/۶۳	قابل قبول
۵	با بیماران/مراجعان ارتباط برقرار کنم	۰/۶۳	قابل قبول
۶	نتایج تحقیقات دانشگاهی را به کار بگیرم	۰/۶۳	قابل قبول
۷	کار خود را به اندازه ی کافی سازماندهی کنم	۰/۶۳	قابل قبول
۸	دستورالعمل ها و پروتکل ها را بکار بگیرم	۰/۶۳	قابل قبول
۹	با بیماران با احترام رفتار کنم	۰/۶۳	قابل قبول
۱۰	به شکایات و حوادث رسیدگی کنم	۰/۴۵	غیر قابل قبول
۱۱	در ارتباط با اخبار ناگوار گفت و گو کنم	۰/۴۵	غیر قابل قبول