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Development of Clinical Skills and Confidence Questionnaire for Triage and Action Minor Emergency Course: Test-Retest Exam

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Abstract

Aim: The Triage and Action (T&A) minor emergency course was developed to improve the clinical skills of Japanese non-specialist physicians for minor emergent problems. Currently, the course quality is evaluated only by a self-reported satisfaction questionnaire. This study described a new clinical skills and confidence questionnaire to evaluate its validity and reliability.

Methods: The web-based questionnaire was evaluated by 103 physicians identified from a mailing list as having taken the T&A minor emergency course. The clinical experience and confidence (CEC) questionnaire was prepared, and its content and contextual validity were validated using a clinical sensibility test (CST). Reliability was assessed by the interclass correlation coefficient after two weeks via a follow-up CEC questionnaire.

Results: Of the 103 physicians contacted 44 (42.7%) responded to the questionnaire, 36 (40.8%) to the follow-up CEC questionnaire, and 33 (32.0%) to both questionnaires; 28 (27.2%) participants took the clinical sensibility test. Five questions which asked the total number of patients treated within six months showed fair agreement on the reliability test. All answers to the questions in the CST were favorable.

Conclusion: We removed every question which asked the total number of patients treated for various minor emergencies within six months from CEC. Consequently, the new questionnaire was shown to be contextually well validated and reliable. We will use the CEC questionnaire to improve our course, which we hope to demonstrate improved primary care for selected minor conditions.

Categories: Emergency Medicine, Medical Education, Medical Simulation

Keywords: foreign bodies in ear or nose, eye injury, ankle sprain, nose bleed, burn first aid, questionnaire development and validation, • simulation in medical education, emergency medicine

Introduction

The practice of emergency medicine in Japan is different from that in western countries [1]. Adequate emergency physicians are unavailable, and non-emergency physicians are required to manage patients with minor emergent problems in the emergency room. These deficits have led to ambulances not being able to find hospitals with appropriate resources to treat patients. A frequent reason given for refusal is “without a specialist,” in case of minor emergencies [2].

We developed a Triage and Action (T&A) minor emergency course (<http://minoremergency.club/>) in Japan and began offering it in 2015 with simulation training to improve clinical knowledge and skills; simulation training has been reported to have clinical context validity in various studies [3-5]. The course has been held 21 times, and 461 physicians have completed it as of December 31, 2018. The course aims to improve clinical knowledge and skills for managing minor emergencies. The training sessions comprised five minor emergencies (epistaxis, ear and nose foreign body, sprain or fracture, ocular surface foreign bodies, and burns) with a lecture- and simulation-based training conducted by dedicated multidisciplinary instructors. The simulation-based training uses real-case scenarios, and participants decide how to treat each training-simulated patient with a minor emergency. The instructors described patients with various diseases and injury scenarios and assessed the participants' decisions and skills. This is a one-day course (7 h), and two T&A minor emergency instructors supervise five attendants. Instructors for the T&A minor emergency course are selected by a T&A principal member after taking the course. All 441 participants who answered the post-course-paper-based “satisfaction” questionnaire responded positively when asked, “Do you think you can use lessons learned from this course in practice?” 80.1% responded “Strongly agree” and 19.9% responded “Agree” [responses from the Likert scale (strongly agree, agree, neither agree nor disagree,

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disagree, and strongly disagree)]. However, information regarding the physicians' clinical practice in treating minor emergencies after taking the course has been limited.

Improvements in clinical skills have usually been evaluated by performing the same simulation task or in a real clinical situation more than three weeks after the simulation [6]. However, T&A minor emergency course participants from all over Japan have participated in this course, making it difficult to evaluate the change in a particular physician's skill level. Therefore, we considered that information regarding a physician's confidence level and the total number of minor emergencies treated could be used to show the change in the physicians' practice and reduce their refusals to treat minor emergencies.

Some simulation courses have used questionnaires to evaluate knowledge before and after the simulation course [7-9]. To ensure that the questionnaire closely matches the real-world experience and ability, the post-course questionnaire should be completed within a few months and should contain information about self-confidence and real clinical practice experience (e.g., change in the total number of treatments without referrals to a specialist within the specific period).

A questionnaire was used to evaluate the change of confidence or clinical skills among physicians [10]. However, to our knowledge, articles on the validity and reliability of questionnaires and changes in physicians' confidence and attitude before and after few months of taking the course are limited. Herein, we aimed to develop a clinical experience and confidence (CEC) questionnaire to evaluate its validity and reliability.

Materials And Methods

This study was approved by the Ethics Committee of the Tokyo Bay Urayasu/Ichikawa Hospital (approval number: 385).

Evaluation strategy

We conducted this study in accordance with the method proposed by Burns et al. [11]. The survey used a questionnaire and the clinical sensibility test (CST). We had previously developed the questionnaire to evaluate how participants change after taking a T&A minor emergency course. We tested the reliability of the questionnaire and used a CST to validate its content.

Methods

The participants responded to the first CEC questionnaire to validate its content using a CST, followed by responding to the follow-up CEC questionnaire within two weeks after the test to evaluate reliability (test-retest exam). This survey was conducted in November and December 2018.

Participants

The web-based questionnaire was evaluated by 103 physicians identified from a mailing list as having taken the T&A minor emergency course. There were two inclusion criteria. (1) To evaluate reliability, we included the responders who answered the first and follow-up CEC questionnaires. (2) To evaluate the validity, we included physicians who answered the first questionnaire and took the CST.

Questionnaire

Two principal developers of the T&A minor emergency course and one physician-researcher created a new questionnaire, called the CEC questionnaire. The questionnaire comprised 32 questions related to two major factors: the physicians' background and practice experience and self-confidence in treating minor emergencies (Supporting Information 1). The responses were provided by checking boxes or by ranking responses.

In the first section, the data collected included age, sex, post-graduate year, specialty (residents, 19 basic specialists from the Japanese Society of Internal Medicine, and others), and the number of hospital beds (clinic and 20-49, 50-99, 100-199, 200-299 beds, 300-499, and ≥ 500 beds) [12].

The second section of the CEC questionnaire had questions about the physicians' experience and confidence in treating each type of minor emergency. We chose five minor emergencies (epistaxis, ear and nose foreign body, sprain or fracture, burn, and ocular surface foreign bodies) that were presented via simulation-based training in the T&A minor emergency course. To evaluate the participant's hospital for its ability to provide minor emergency treatment, it was required that the hospital has a specialist for the disease; for example, the specialist for epistaxis and ear and nose foreign body was otolaryngologists [13,14], for sprain or fracture were orthopedic physicians [15], for burns were dermatologists and plastic surgeons [16], and for ocular surface foreign bodies were ophthalmologists [17]. The following questions were created: (1) "The total number of patients seen within each specialty in a month," (2) "With or without specialists in the respondent's hospital," (3) "Total number of minor emergencies treated within six months," (4)

“Confidence,” (5) Experience of each minor emergency without a specialist’s support within the last six months?,” and (6) “Total number of patients treated for each minor emergency without specialist support within the last six months?”

The web-based follow-up CEC questionnaire was modified and resent to participants two weeks after completion of the first CEC questionnaire. The modification was the removal of the physician’s background in the first questionnaire to reduce the effort needed to answer the follow-up CEC questionnaire.

To evaluate the reproducibility of the questionnaire, the participant’s name was used to match the first and follow-up CEC questionnaires’ responses.

Clinical sensibility test (CST)

The CST was performed to assess the comprehensiveness, clarity, and contextual validity of the web-based CEC questionnaire’s content (Supporting Information 2) [11]: (1) “Important issues pertaining to the T&A course,” (2) “Missing items,” (3) “Simplicity and ease in understanding,” (4) “Information about physician’s knowledge and experience,” (5) Inappropriate or redundant items,” (6) “Issues in the physician’s knowledge and experiences of minor emergencies,” and (7) “Answering time (minutes).” The participants answered questions 1-4 and 6 by selecting a response from the Likert scale (e.g., very unlikely, unlikely, neutral, likely, and very likely). The answers to question 5 were “Yes” or “No.” Questions 2, 4, 5, and 6 had a free-entry column about each question. A free-entry column was also provided for the participants to suggest ideas on how to improve the questionnaire.

Primary data analysis

We used the STATA/MP 15.1 software (StataCorp LLC, Texas, USA) for data analyses and interclass correlation coefficient (ICC) analysis to assess reliability. We decided that the reliability coefficient could be qualitatively categorized as follows: $ICC < 0.4$ is poor, $0.4 \leq ICC < 0.6$ is fair, $0.6 \leq ICC < 0.75$ is good, and $0.75 \leq ICC \leq 1$ is excellent [18].

Results

Characteristics of study participants

During the study period, 44 (42.7%) participants responded to the first CEC questionnaire and 36 (40.8%) responded to the follow-up CEC questionnaire; 33 (32.0%) answered both questionnaires; 28 (27.2%) took the CSC, and no responders replied only to the CSC. Table 1 presents the backgrounds of the physicians who answered both CEC questionnaires.

Variable	First questionnaire (n = 33)
Age, years, median (IQR)	34 (31–39)
PGY, years, median (IQR)	8.0 (5–10)
Male gender, No. (%)	31 (93.9)
Specialty, No. (%)	
Residents	3 (9.1)
Internal medicine	8 (24.2)
Surgery	0 (0.0)
General medicine	8 (24.2)
Pediatric	1 (3.0)
Plastic surgery	0 (0.0)
Emergency medicine	6 (18.2)
Pathology	0 (0.0)
Anesthesiology	0 (0.0)
Radiology	0 (0.0)
Neurosurgery	0 (0.0)
Urology	0 (0.0)
Otolaryngology	0 (0.0)
Ophthalmology	1 (3.0)
Gynecology	0 (0.0)
Orthopedic	5 (15.2)
Psychiatry	0 (0.0)
Dermatology	1 (3.0)
Rehabilitation	0 (0.0)
Clinical laboratory department	0 (0.0)
Others	0 (0.0)
Size of hospital, No. (%)	
Clinic	4 (12.5)
20–49 beds	1 (3.1)
50–99 beds	2 (6.3)
100–199 beds	6 (18.8)
200–299 beds	1 (3.1)
300–499 beds	8 (25.0)
≥500 beds	10 (31.3)

TABLE 1: Characteristics of the participants who took the CEC and follow-up CEC questionnaires

IQR - Interquartile range; CEC - Clinical experience and confidence; PGY - Post-graduate year

The first CEC and the follow-up CEC

Table 2 presents the results of the participants who took the first CEC and the follow-up CEC questionnaires. The mean time period in which the two questionnaires were completed was 35.4 days (SD = 12.1). We found that five questions regarding “The total number of epistaxis patients treated without an otolaryngologist within 6 months”; “The total number of ear and nose foreign body patients treated without an otolaryngologist within 6 months”; “The total number of burn patients treated within 6 months”; “The total number of burn patients treated without a dermatologist or plastic surgeon within 6 months”; and “The total number of patients with ocular surface foreign bodies treated without an ophthalmologist within 6 months” achieved a fair ICC ($0.4 \leq \text{ICC} < 0.6$).

Variables	First questionnaire (n = 33)	Follow-up questionnaire	ICC
Otolaryngologists			
Epistaxis			
1. Otolaryngologist, No. (%)	17 (51.5)	16 (48.5)	0.97
2. Total number of patients with otolaryngology disease treated within 1 month, median (IQR ^a)	2.0 (1.0–5.0)	2.0 (1.0–5.0)	0.61
3. Total number of epistaxis patients treated within 6 month, median (IQR)	2.0 (1.0–3.0)	1.0 (0.0–2.0)	0.85
4. Confidence for “Epistaxis,” median (IQR)	3.0 (3.0–4.0)	4.0 (3.0–4.0)	0.84
5. Treated “Epistaxis” without otolaryngologist within 6 months, No. (%)	21 (65.6)	18 (54.6)	0.86
6. Total number of “Epistaxis” patients treated without otolaryngologist within 6 months, median (IQR)	1.0 (0.0–3.0)	1.0 (0.0–3.0)	0.51
Ear and nose foreign body			
3. Total number of “ear and nose foreign body” patients treated within 6 months, median (IQR)	0.0 (0.0–1.0)	0.0 (0.0–1.0)	0.76
4. Confidence for “ear and nose foreign body,” median (IQR)	3.0 (2.0–3.0)	3.0 (2.0–3.0)	0.85
5. Treated “ear and nose foreign body” without otolaryngologist within 6 months, No. (%)	14 (42.4)	8 (24.2)	0.65
6. Total number of patients with “ear and nose foreign body” treated without an otolaryngologist within 6 months, median (IQR)	0.0 (0.0–1.0)	0.0 (0.0–1.0)	0.59
Orthopedic			
Sprain or fracture			
1. Orthopedist, No. (%)	26 (78.9)	25 (75.8)	0.96
2. Total number of patients with orthopedic disease treated within a month, median (IQR)	10.0 (4.0–50.0)	10.0 (4.5–25.0)	0.99
3. Total number of patients with “sprain or fracture” treated within 6 month, median (IQR)	10.0 (2.0–50.0)	5.0 (2.0–50.0)	0.99
4. Confidence for “sprain or fracture,” median (IQR)	3.0 (3.0–4.0)	4.0 (3.0–4.0)	0.94
5. Treated “sprain or fracture” without orthopedist within 6 months, No. (%)	17 (51.5)	17 (51.5)	0.93
6. Total number of patients with “sprain or fracture” treated without an orthopedist within 6 months, median (IQR)	2.5 (0.0–27.5)	3 (0.0–20.0)	0.69
Dermatology or plastic surgery			
Burn			
1. Dermatologist or plastic surgeon, No. (%)	20 (60.6)	20 (60.6)	0.93
2. Total number of patients with dermatological disease treated within a month, median (IQR)	8.0 (3.0–10.0)	5 (4.0–10.0)	0.61
3. Total number of “burns” patients treated within 6 months, median (IQR)	1.0 (0.0–3.0)	1.0 (0.0–3.0)	0.49
4. Confidence for “burns,” median (IQR)	3.0 (3.0–4.0)	3.0 (3.0–4.0)	0.92

5. Treated "burns" without a dermatologist or plastic surgeon within 6 months, No. (%)	19 (57.6)	16 (48.5)	0.83
6. Total number of patients with "burns" treated without a dermatologist or plastic surgeon within 6 months, median (IQR)	1.0 (0.0–2.5)	0.5 (0.0–3.0)	0.42
Ophthalmology			
Ocular surface foreign body			
1. Ophthalmologist, No. (%)	19 (57.6)	19 (57.6)	0.94
2. Total number of patients with ophthalmic disease treated within a month, median (IQR)	1.0 (1.0–5.0)	2.0 (0.0–5.0)	0.98
3. Total number of patients with "cornea and conjunctival foreign body" treated within a month, median (IQR)	1.0 (0.0–2.0)	1.0 (0.0–2.0)	0.64
4. Confidence for "ocular surface foreign body," median (IQR)	3.0 (2.0–4.0)	3.0 (3.0–4.0)	0.86
5. Treated "ocular surface foreign body" without an ophthalmologist within 6 months, No. (%)	15 (45.5)	11 (33.3)	0.90
6. Total number of patients with "ocular surface foreign body" treated without ophthalmologist within 6 months, median (IQR)	0.0 (0.0–2.0)	0.0 (0.0–1.5)	0.48

TABLE 2: Results of ICC in the first CEC and follow-up CEC questionnaires

IQR - Interquartile range; ICC - Interclass correlation coefficient; CEC - Clinical experience and confidence

Clinical sensibility test (CST)

Table 3 presents the results of the CST. For questions 1, 3, and 4, >80% of the respondents answered: "Fair to a large extent." For question 2, 96.5% of the respondents opted for "Minor to insignificant gaps." For question 5, 92.9% of the respondents stated that no items were inappropriate or redundant in the questionnaire. For question 6, 92.6% of the respondents answered "Likely to very likely." The median time to answer the questionnaire was 5 minutes [interquartile range (IQR): 5–10 minutes].

Variables	Answer (n = 22)
1. To what extent are the questions directed at important issues pertaining to T&A minor emergency course participants?	
Small extent	0 (0%)
Limited extent	2 (7.1%)
Fair extent	12 (42.9%)
Moderate extent	11 (39.3%)
Large extent	3 (10.8%)
2. Are there important issues pertaining to your practice that should be included in the questionnaire but were omitted?	
Crucial gaps	0 (0%)
Important gaps	1 (3.6%)
Minor gaps	4 (14.3%)
Minimal gaps	15 (53.6%)
Insignificant gaps	8 (28.6%)
3. To what extent are the response options provided simple and easily understood?	
Small extent	0 (0%)
Limited extent	5 (17.9%)
Fair extent	12 (42.9%)

Moderate extent	7 (25.0%)
Large extent	4 (14.3%)
4. To what extent are questions likely to elicit information pertaining to your use of and experience in T&A minor emergency course's participants?	
Small extent	0 (0%)
Limited extent	2 (7.1%)
Fair extent	10 (35.7%)
Moderate extent	10 (35.7%)
Large extent	6 (21.4%)
5. Are there any items inappropriate or redundant?	
Yes	2 (7.1%)
No	26 (92.9%)
6. How likely is the questionnaire to elicit important issues in physician's attitude for minor emergencies in T&A minor emergency course's participants?	
Small extent	0 (0%)
Limited extent	2 (7.1%)
Fair extent	13 (46.4%)
Moderate extent	5 (17.9%)
Large extent	8 (28.6%)
7. How long did it take you to complete the questionnaire (min)?	5 (5–10)

TABLE 3: Results of participants who took the CST

CST - Clinical sensibility test

Discussion

The study results showed that the CEC questionnaire about the T&A minor emergency course was valid and reliable.

In the CEC and follow-up CEC questionnaire analysis, five questions about the total number of patients treated for various minor emergencies alone or with a specialist within six months gave a fair ICC value (0.4≤ ICC<0.6). Morita et al. reported that it was difficult to show reliable results for questions involving human emotions or knowledge because of changes in the subjects' subjective conditions [19]. This fair ICC may have been caused by random error or because the participants saw different number of patients during the study periods. The results showed that total number of patients treated for various minor emergencies within six months was small and some participants did not experience them at all. Therefore, we considered questions asking for the total number of patients treated for various minor emergencies within six months were not informative enough, and the binominal questions which asked whether the participants experienced treating minor emergencies alone within six months were sufficient. Finally, we removed every question which asked the total number of patients treated for various minor emergencies alone or with a specialist within six months.

All answers to the questions in the CST were favorable, which we interpreted as strong indication of the validity of the questionnaire's content and clinical context [20]. Regarding question 2, some responders mentioned that this survey did not include a question about "satisfaction rate." The lack of this question may cause less confidence in the questionnaire among some physicians. However, our course already collected information regarding the "satisfaction rate" on paper-based questionnaire without the physicians' names before starting the study. Because we thought that the participants' answers may be affected if the questionnaire was not anonymous, no name should be associated with the "satisfaction rate" question [21]. Therefore, a question about the "satisfaction rate" was not included in our web-based questionnaire. Galesic

et al. reported in their web-based study that their online questionnaire’s length (10, 20, and 30 min) was longer than the length and number of participants in our study and fewer respondents started and completed the questionnaire [22]. Our study showed that the median time to answer the questionnaire was 5 (IQR, 5–10) min, which we considered to be very reasonable.

One of the participants commented in the free-entry column that “This questionnaire should contain questions about the availability of a specialist at night or when the primary physician has a day off.” Therefore, we added a question asking “Do you have specialist support at night or on holidays?,” and the answers were “Any time as needed,” “Sometimes,” and “Not at all.”

Limitations

This study has several limitations. The first concerns the external validity because we chose T&A minor emergency mailing list members to serve as participants; therefore, the risk of selection bias should be considered. Furthermore, the limited sample size should be considered. The second is that we used two questionnaires over a two-week period. Therefore, the actual practice pattern may have changed during the two weeks. Third, the sample size was small, and the response rate was low, which can be attributed to the fact that the respondents were volunteers.

Conclusions

This newly developed questionnaire was developed to evaluate the change in clinical skills and confidence of clinical practice after completing a T&A minor emergency course. In the future, we plan to send a pre-web-based questionnaire before the course and a post-web-based questionnaire six months after the course. The post-web-based questionnaire contains the same question as those in the pre-questionnaire, except the addition of the question “Did you change your place of work after answering the pre-questionnaire?” to check this possibility. Our study shows the validity and reliability of the questionnaire. Future research should focus on administering the questionnaire to participants in the T&A minor emergency course. These results will provide us information regarding ways to improve the T&A minor emergency course.

Appendices

T&A minor emergency course's questionnaire

This questionnaire is for T&A minor emergency course's registered questionnaire. The results of this study will be used for scholarly purposes only.
The procedure involves filling an online survey that will take approximately 10 minutes
Agreement of the research have the answers to the questionnaire will be happy to judges that were obtained.
Your participation in this research study is voluntary. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdrawal from participating at any time, you will not be penalized. our responses will be confidential and we do not collect identifying information such as your name, email address or IP address.
Please answer the following question assuming your hospital or clinic.

* Required

1. Name *

2. Age *

3. Post graduated year *

4. Gender *

Mark only one oval.

☐ Male

☐ Female

FIGURE 1: Supplement1 Page 1

5. Prefecture *

Mark only one oval.

- ☐ Hokkaido
- ☐ Aomori
- ☐ Iwate
- ☐ Miyagi
- ☐ Akita
- ☐ Yamagata
- ☐ Fukushima
- ☐ Ibaraki
- ☐ Tochigi
- ☐ Gunma
- ☐ Saitama
- ☐ Chiba
- ☐ Tokyo
- ☐ Kanagawa
- ☐ Niigata
- ☐ Toyama
- ☐ Ishikawa
- ☐ Fukui
- ☐ Yamanashi
- ☐ Nagano
- ☐ Gifu
- ☐ Sizuoka
- ☐ Aichi
- ☐ Mie
- ☐ Shiga
- ☐ Kyoto
- ☐ Osaka
- ☐ Hyogo
- ☐ Nara
- ☐ Wakayama
- ☐ Tottori
- ☐ Shimane
- ☐ Okayama
- ☐ Hiroshima
- ☐ Yamaguchi
- ☐ Tokushima
- ☐ Kagawa
- ☐ Ehime
- ☐ Kochi
- ☐ Fukuoka
- ☐ Saga

FIGURE 2: Supplement1 Page 2

☐ Nagasaki

☐ Kumamoto

☐ Oita

☐ Miyazaki

☐ Kagoshima

☐ Okinawa

6. Speciality *

Mark only one oval.

☐ Resident

☐ Internal medicine

☐ Surgery

☐ General medicine

☐ Pediatrics

☐ Plastic surgery

☐ Emergency medicine

☐ Pathology

☐ Anesthesiology

☐ Radiology

☐ Neurosurgery

☐ Urology

☐ Otolaryngology

☐ Ophthalmology

☐ Obstetrics and Gynecology

☐ Orthopedics

☐ Psychiatry

☐ Dermatology

☐ Rehabilitation

☐ Clinical examination

☐ Others

7. The number of your hospital bed

Mark only one oval.

☐ Non-bed clinic

☐ Medical clinic (1~19 beds)

☐ 20~49 beds

☐ 50~99 beds

☐ 100~199 beds

☐ 200~299 beds

☐ 300~499 beds

☐ More than 500 beds

FIGURE 3: Supplement1 Page 3

1 : How many ophthalmic diseases do you see within a month?

1-1 : Does your hospital have ophthalmology department?
 Mark only one oval.

☐ Yes

☐ No

1-2 : How many patients who have ocular surface foreign body do you see within 6 months?

1-3 : How confident are you managing ocular surface foreign body?
 Mark only one oval.

	0	1	2	3	4	5	
No confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Fully confident

1-4 : Have you treated patients with ocular surface foreign body in the last 6 months without ophthalmologist help?
 Mark only one oval.

☐ Yes

☐ No

☐ I am ophthalmologist

1-5 : How many patients with ocular surface foreign body do you see in 6 months without ophthalmologist help?

2 : How many otolaryngological diseases do you see within a month?

2-1 : Does your hospital have otolaryngology department?
 Mark only one oval.

☐ Yes

☐ No

2-2 : How many patients with epistaxis do you see in 6 months?

FIGURE 4: Supplement1 Page 4

2-3 : How confident are you managing epistaxis?
Mark only one oval.

012345

No confident☐ ☐ ☐ ☐ ☐ ☐ Fully confident

2-4 : Have you treated patients with epistaxis in the last 6 months without otolaryngologist help?
Mark only one oval.

☐ Yes

☐ No

☐ I am otolaryngologist

2-5 : How many patients with epistaxis do you see in 6 months without otolaryngologist help?

2-6 : How many patients with foreign body in the ear or nose have you see in 6 months?

2-7 : How confident are you managing foreign body in the ear or nose ?
Mark only one oval.

012345

No confident☐ ☐ ☐ ☐ ☐ ☐ Fully confident

2-8 : Have you treated patients with foreign body in the ear or nose in the last 6 months without otolaryngologist help?
Mark only one oval.

☐ Yes

☐ No

☐ I am otolaryngologist

2-9 : How many patients with foreign body in the ear or nose do you see in 6 months without otolaryngologist help?

3 : How many dermatological diseases do you see in a month?

FIGURE 5: Supplement1 Page 5

3-1 : Does your hospital have dermatology or plastic surgeon department
? Mark only one oval.

- ☐ Yes
- ☐ No

3-2 : How many patients with burn do you see in 6 months?

3-3 : How confident are you managing burn?
Mark only one oval.

	0	1	2	3	4	5	
No confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Fully confident

3-4 : Have you treated patients with burn in the last 6 months without dermatologist or plastic surgeon help?
Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ I am dermatologist or plastic surgeon

3-5 : How many patients with burn do you see in 6 months without dermatologist or plastic surgeon help?

4 : How many orthopedic disease do you see within a month?

4-1 : Does your hospital have orthopedic department?
Mark only one oval.

- ☐ Yes
- ☐ No

4-2 : How many patients with sprain or fracture do you see in 6 months?

4-3 : How confident are you managing sprain or fracture?
Mark only one oval.

	0	1	2	3	4	5	
No confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Fully confident

FIGURE 6: Supplement1 Page 6

4-4 : Have you treated patients with sprain or fracture in the last 6 months without orthopedic help?
Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ I am orthopedic

4-5 : How many patients with sprain or fracture do you see in 6 months without orthopedic help?

5 : Please write any question about the course.

Thank you for completing this questionnaire!

FIGURE 7: Supplement1 Page 7

Clinical sensibility testing

* Required

1. To what extent are the questions directed at important issues pertaining to the T&A minor emergency course in the participants? *

Mark only one oval.

- ☐ Small Extent
- ☐ Limited Extent
- ☐ Fair Extent
- ☐ Moderate Extent
- ☐ Large Extent

2. Are there important issues pertaining to your use of the T&A minor emergency course that should be included in the questionnaire but have been omitted? *

Mark only one oval.

- ☐ Crucial Gaps
- ☐ Important Gaps
- ☐ Minor Gaps
- ☐ Minimal Gaps
- ☐ Insignificant Gaps

2-1 Please identify any omissions

3. To what extent are the response options provided simple and easily understood? *

Mark only one oval.

- ☐ Small Extent
- ☐ Limited Extent
- ☐ Fair Extent
- ☐ Moderate Extent
- ☐ Large Extent

FIGURE 8: Supplement2 Page 1

4. To what extent are the questions likely to elicit information pertaining to your use of and experience with the T&A minor emergency course in the participants? *

Mark only one oval.

- ☐ Small Extent
- ☐ Limited Extent
- ☐ Fair Extent
- ☐ Moderate Extent
- ☐ Large Extent

5. Are there any items inappropriate or redundant? *

Mark only one oval.

- ☐ Yes
- ☐ No

5-1. What questions do you think inappropriate or redundant?

6. How likely is the questionnaire to elicit knowledge and experience in the T&A minor emergency participants? *

Mark only one oval.

- ☐ Very Unlikely
- ☐ Unlikely
- ☐ Likely
- ☐ Quite Likely
- ☐ Very Likely

7. How long did it take you to complete the questionnaire? *

8. Free writing space.

Thank you very much!

FIGURE 9: Supplement2 Page 2

T&A マイナーエマージェンシーアンケート

本アンケートはT&Aマイナーエマージェンシー参加者を対象にした無記名自記式アンケート調査です。本研究を用いて学会発表、論文投稿を予定しております。
記入時間は10分程度です。アンケートへの回答をもって研究への同意が得られたと判断させていただきます。
研究協力は研究協力者の自由意思により決定し、拒否できることを保障すること、研究協力を断ることによるご迷惑をおかけしないこと、プライバシーや個人情報の保護に十分配慮すること、研究協力によるご負担や不快への配慮をお約束致します。

*必須

1. 名前 *

2. 年齢 *

3. 卒後年数 *

4. 性別 *

1つだけマークしてください。

- ☐ 男性
- ☐ 女性

FIGURE 10: Original Japanese questionnaire page 1

5. 職場の所在地
1つだけマークしてください。

- ☐ 北海道
- ☐ 青森県
- ☐ 岩手県
- ☐ 宮城県
- ☐ 秋田県
- ☐ 山形県
- ☐ 福島県
- ☐ 茨城県
- ☐ 栃木県
- ☐ 群馬県
- ☐ 埼玉県
- ☐ 千葉県
- ☐ 東京都
- ☐ 神奈川県
- ☐ 新潟県
- ☐ 富山県
- ☐ 石川県
- ☐ 福井県
- ☐ 山梨県
- ☐ 長野県
- ☐ 岐阜県
- ☐ 静岡県
- ☐ 愛知県
- ☐ 三重県
- ☐ 滋賀県
- ☐ 京都府
- ☐ 大阪府
- ☐ 兵庫県
- ☐ 奈良県
- ☐ 和歌山県
- ☐ 鳥取県
- ☐ 島根県
- ☐ 岡山県
- ☐ 広島県
- ☐ 山口県
- ☐ 徳島県
- ☐ 香川県
- ☐ 愛媛県
- ☐ 高知県
- ☐ 福岡県

FIGURE 11: Original Japanese questionnaire page 2

7. あなたが働いている病院の規模

1つだけマークしてください。

- ☐ 無床診療所
- ☐ 有床診療所
- ☐ 20～49床の病院
- ☐ 50～99床の病院
- ☐ 100～199床の病院
- ☐ 200～299床の病院
- ☐ 300～499床の病院
- ☐ 500床以上の病院

質問1：月に眼科疾患を診る頻度（例）。約～例
など記載せず大まかな整数で記載してください。

質問1-1：あなたの病院は眼科医が常勤していますか？

1つだけマークしてください。

- ☐ はい
- ☐ いいえ

質問1-2：半年の間にあなたが「目に異物が入った患者」を診る頻度を教えてください（例）。
約～例などと記載せず大まかな整数で記載してください。

質問1-3：「目に異物が入った患者」の応急処置をどの程度自信をもって対応できますか。

1つだけマークしてください。

	0	1	2	3	4	5	
全く自信がない	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	完全に自信をもって対応できる

質問1-4：半年の間に専門家（眼科）の支援なしに「目に異物が入った患者」の対応を行いましたか？

1つだけマークしてください。

- ☐ はい
- ☐ いいえ
- ☐ 専門が眼科医です

FIGURE 12: Original Japanese questionnaire page 3

質問1-5：回答日までの半年間で何例程度、当日の眼科医の支援なしに何例程度「目に異物が入った患者」の適切に対応を行いましたか？約～例などと記載せず大まかな整数で記載してください。（眼科医の方は空欄にしてください）

質問2：あなたが月に耳鼻科疾患を診る頻度（例）を教えてください。約～例などと記載せず大まかな整数で記載してください。

質問2-1：あなたの病院は耳鼻科医が常勤していますか？
1つだけマークしてください。

☐ はい
 ☐ いいえ

質問2-2：あなたが半年の間に鼻出血の患者を診る頻度（例）を教えてください。約～例などと記載せず大まかな整数で記載してください。

質問2-3：鼻出血の患者の応急処置をどの程度自信をもって対応できますか。
1つだけマークしてください。

012345

全く自信がない

☐
☐
☐
☐
☐
☐

完全に自信をもって対応できる

質問2-4：回答日までの半年の間に専門家（耳鼻科）の応援なしに鼻出血の止血を施行しましたか？
1つだけマークしてください。

☐ はい
 ☐ いいえ
 ☐ 専門が耳鼻科医です

質問2-5：回答日までの半年間で何例程度、耳鼻科医を介さず鼻出血を適切に止血できましたか？約～例などと記載せず大まかな整数で記載してください。（耳鼻科医の方は空欄にしてください）

FIGURE 13: Original Japanese questionnaire page 4

質問2-6：あなたが半年の間に鼻腔・外耳道異物を診る頻度（例）を教えてください。約～例などと記載せず大まかな整数で記載してください。

質問2-7：鼻腔・外耳道異物患者の応急処置をどの程度自信をもって対応できますか。
1つだけマークしてください。

	0	1	2	3	4	5	
全く自信がない	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	完全に自信をもって対応できる

質問2-8：専門家（耳鼻科）の応援なしに鼻腔・外耳道異物除去を施行しましたか？
1つだけマークしてください。

- ☐ はい
☐ いいえ
☐ 専門が耳鼻科医です

質問2-9：回答日までの半年間、何例程度、専門家（耳鼻科）を介さず、鼻腔・外耳道異物を適切に除去できましたか？約～例などと記載せず大まかな整数で記載してください。（耳鼻科医の方は空欄にしてください）

質問3：あなたが月に皮膚科疾患を診る頻度（例）を教えてください。約～例などと記載せず大まかな整数で記載してください。

質問3-1：あなたの病院は皮膚科医が常勤していますか？
1つだけマークしてください。

- ☐ はい
☐ いいえ

質問3-2：あなたが半年の間に熱傷の患者を診る頻度（例）を教えてください。約～例などと記載せず大まかな整数で記載してください。

FIGURE 14: Original Japanese questionnaire page 5

質問3-3：熱傷患者の応急処置をどの程度自信をもって対応できますか。

1つだけマークしてください。

0

1

2

3

4

5

全く自信がない

☐
☐
☐
☐
☐
☐

完全に自信をもって対応できる

質問3-4：回答日までの半年の間に専門家（皮膚科）の当日の支援なしに熱傷の処置を施行しましたか？

1つだけマークしてください。

☐ はい
 ☐ いいえ
 ☐ 専門が皮膚科医です

質問3-5：回答日までの半年間で何例程度、当日の皮膚科の支援なしに適切に熱傷の処置ができましたか？約～例などと記載せず大まかな整数で記載してください。（皮膚科医の方は空欄にしてください）

質問4：あなたが月に整形外科疾患を診る頻度（例）を教えてください。約～例などと記載せず大まかな整数で記載してください。

質問4-1：あなたの病院は整形外科医が常動していますか？

1つだけマークしてください。

☐ はい
 ☐ いいえ

質問4-2：あなたが半年の間に捻挫、骨折の患者を診る頻度（例）を教えてください。約～例などと記載せず大まかな整数で記載してください。

質問4-3：捻挫、骨折の患者の応急処置をどの程度自信をもって対応できますか。

1つだけマークしてください。

0

1

2

3

4

5

全く自信がない

☐
☐
☐
☐
☐
☐

完全に自信をもって対応できる

FIGURE 15: Original Japanese questionnaire page 6

質問4-4：回答日までの半年の間に専門家（整形外科）の当日の支援なしに捻挫、骨折の処置を
施行しましたか？

1つだけマークしてください。

☐ はい

☐ いいえ

☐ 専門が整形外科です

質問4-5：回答日までの半年間で何例程度、当日
の整形外科の支援なしに捻挫、骨折の処置を適
切に行いましたか？約～例などと記載せず大ま
かな整数で記載してください。（整形外科医の
方は空欄にしてください）

質問5：事前質問 自由に記載してください

FIGURE 16: Original Japanese questionnaire page 7

Clinical sensibility test

T&Aマイナーエマージェンシー事前事後アンケートに対する質問紙表です。

***必須**

質問1. 今回の設問はT&Aマイナーエマージェンシー参加者に対してコース全体に対する評価をどの程度引き出せていますか？ *

1つだけマークしてください。

- ☐ 全く引き出せていない
- ☐ あまり引き出せていない
- ☐ まあまあ引き出せている
- ☐ よく引き出せている
- ☐ とてもよく引き出せている

質問2. T&Aマイナーエマージェンシー参加者に対する設問として足りない項目はありますか？ *

1つだけマークしてください。

- ☐ とてもたくさんある
- ☐ たくさんある
- ☐ ある
- ☐ ほとんどない
- ☐ 全くない

質問2-1 どういった項目が足りないでしょうか？

質問3. 設問はどの程度、簡潔でわかりやすいですか？ *

1つだけマークしてください。

- ☐ 非常に複雑で難解
- ☐ 複雑で難解
- ☐ 普通
- ☐ 簡潔でわかりやすい
- ☐ とても簡潔でわかりやすい

FIGURE 17: Original Japanese Clinical sensibility test page 1

質問4.これらの質問はあなたの知識、経験に関して、必要な情報をどの程度引き出せていますか？ *

1つだけマークしてください。

- ☐ 全く引き出せていない
- ☐ あまり引き出せていない
- ☐ まあまあ引き出せている
- ☐ 引き出せている
- ☐ ほとんど引き出せている

質問5. 不適切、または繰り返しの質問がありますか？ *

1つだけマークしてください。

- ☐ ある
- ☐ ない

質問5-1 不適切、または繰り返しの質問をどの項目ですか？

質問6. T&Aマイナーエマージェンシを受講後の、コースで行った講義とシミュレーションの対象疾患を診る医師の対応の変化を、この質問紙表によってどの程度とらえられることができると思われますか？ *

1つだけマークしてください。

- ☐ 全く引き出せていない
- ☐ あまり引き出せていない
- ☐ まあまあ引き出せている
- ☐ よく引き出せている
- ☐ とてもよく引き出せている

質問7. 何分程度回答に時間がかかりましたか？ *

質問8. 他に記載したいことがあれば自由に記載をお願い致します。

FIGURE 18: Original Japanese Clinical sensibility test page 2

Additional Information

Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. The Ethics Committee of Tokyo Bay Urayasu/Ichikawa Hospital issued approval 385. The protocol for this research project was approved by the Ethics Committee of Tokyo Bay Urayasu/Ichikawa Hospital (approval number: 385) and it conforms to the provisions of the Declaration of Helsinki. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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