



Evaluation of two-time zones online training to transform older people's care

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HIGHLIGHTS

- Trainees greatly valued the e-TRIGGER programs, which fulfilled their learning objectives.
- Most participants implemented the knowledge in their daily clinical practice.
- More than half reported improved skills in elder care, while about 20 % saw professional advancement.
- The program showed a significant impact, though sustainability training presents ongoing challenges.
- The future involves expanding into Latin America and introducing specialized short courses.

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ABSTRACT

This paper reports the evaluation by trainees of the innovative online education initiative known as the e-TRIGGER (e-Training In Gerontology and Geriatrics) program, which targets healthcare professionals working with older adults in Africa, the Middle East, and Europe (AFMEE course) and in Asia-Oceania (ASIO). The e-TRIGGER programs are implemented under the auspices of the International Association of Gerontology and Geriatrics (IAGG). The first year of teaching of the AFMEE program (May 2023 to April 2024) and the third year of the ASIO program (January to December 2024) were evaluated by the students using a satisfaction survey implemented at the end of the year of teaching. Almost all trainees reported that the course met their personal objectives. A significant majority reported applying acquired knowledge directly (AFMEE, 75 %; ASIO, 78 %) and indirectly (AFMEE, 30 %; ASIO, 42 %) in their daily work. Over half reported improved skills in caring for older adults (AFMEE 65 %, ASIO 52 %). Around one-fifth reported a job or career promotion after course completion (AFMEE 21 %, ASIO 17 %). The evaluation highlights the significant impact and success of the e-TRIGGER program for most alumni. Key challenges of this innovative teaching program include ensuring financial sustainability and addressing specific training needs related to long-term care, dementia management, and technology integration. Future perspectives include expanding the program to Latin America (IAGG e-TRIGGER LATAM) and developing complementary, specialized short courses on specific areas of geriatric medicine and gerontology.

The first session of the online e-TRIGGER (e-Training In Gerontology and Geriatrics) program (<https://iagg-fge.org/>) was held in December

2021, marking a significant step forward in the education of health professionals caring for older adults by fostering innovation, creativity,

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and overcoming the challenges of education in culturally different contexts (Michel et al., 2023). This online program, previously described elsewhere (Michel et al., 2023), consists of 12 monthly sessions, each lasting 3 h, covering primary geriatric medicine and gerontology topics. The courses are open to healthcare professionals from all backgrounds and professions who work with older adults in any setting. To validate their participation and obtain the certificate at the end of the 12 months, trainees must pass at least 10 of the 12 continuing medical education (CME) quizzes available for the students after each monthly session.

The importance of this program cannot be overstated. Indeed, the global workforce faces three main challenges in geriatric education. Firstly, most medical universities and schools for healthcare professionals worldwide do not offer specialized undergraduate training in geriatrics (Pearson et al., 2024). Secondly, there is a dramatic global shortage of health professionals, with the shortfall projected by the World Bank and World Health Organization (WHO) to reach between 32 and 43 million in 2030 (Liua et al., 2016; World Health Organization, 2020). Thirdly, the rapidly aging global population has urgent and growing care needs. There will be >2 billion older adults by 2050, of whom 80 % will live in developing countries (United Nations, 2024; Tan, 2022). The WHO has referred to this situation as a “ticking time bomb” and proposes 10 actions, of which five focus on education to strengthen the health and care workforce (World Health Organization, 2020).

The e-TRIGGER program employs an innovative educational model for lifelong learning, incorporating various pedagogical methods, including flipped classroom models and interactive, culturally adapted case-based learning. These learning strategies foster critical thinking, adaptability, and creativity—skills that are essential for healthcare professionals operating in an ever-changing world. The programs are delivered online, overcoming geographical and logistical barriers through technology like the Moodle platform. This creates a scalable and adaptable model that can grow in response to emerging educational needs (Michel et al., 2023).

We have now accrued three full years of experience with the Asia, Oceania (ASIO) program and are in the second year of teaching for a second time zone, Africa, Middle East, and Europe (AFMEE) program. In line with recommendations for quality improvement, it is essential to report the post-course evaluations for the courses held to date, to identify any areas amenable to improvement. Therefore, we present here the results of the alumni’s assessment of the e-TRIGGER program.

1. Methods

We implemented a course evaluation survey for all registered participants in the third year of the ASIO program (from January to December 2024) and all registered participants in the first year of the AFMEE program (from May 2023 to April 2024). (The questionnaire is provided in the Supplementary Material). It was implemented as a post-course survey in the online teaching platform (Moodle). The questionnaire was made available to the trainees 2 days after the Awards ceremony, specifically on June 27, 2024, for AFMEE, and on January 10, 2025, for ASIO. Completing the questionnaire was mandatory to receive the certificate of course completion in PDF format. Trainees had one month to respond to the questionnaire, after which it was no longer available.

Two authors (Rds, JPK) developed the evaluation questionnaire with input from other team members (FE, JPM, JBe, JBa). It is based on previous questionnaires used in various educational initiatives, with specific adaptations for e-TRIGGER and informed by international recommendations for quality criteria in academic events.

Descriptive statistics are presented in both numerical and percentage forms.

2. Results

2.1. Respondents

Regarding AFMEE, 315 trainees registered for their first year of teaching in 2023. Among these, 242 (79 %) completed the assignments, and 185 (59 %) successfully met the criteria to be awarded the IAGG-W certificate at the end of the course, resulting in a success rate of 76 %. The 185 awardees hailed from 30 different countries, with 46 laureates from the African region, 63 from Europe, 61 from the Middle East, 14 from India, and one from South America (Argentina), as shown in Fig. 1A. The number of students per country is shown in Fig. 1BA total of 195 responses (169 from awardees and 26 from trainees who completed the course but did not receive the certificate) to the AFMEE evaluation questionnaire were received.

In 2024, regarding the third year of the ASIO course, there were 71 registered participants, of whom 51 completed the assignments (72 %), and 39 (55 %) earned the IAGG-W certificate, resulting in a success rate of 76 %. The 39 laureates came from nine different Asian countries: Australia, China, India, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea, and Thailand (Fig. 1A). Ten trainees from the 2023 ASIO cohort participated as scholars in the ASIO 2024 course. All 39 trainees, including 31 awardees, completed the ASIO evaluation questionnaire. (Fig. 1A–C).

Overall, all trainees rated the programs highly: 46 % of AFMEE and 31 % of ASIO trainees evaluated the training as very good, and 50 % and 67 % of AFMEE and ASIO trainees, respectively, reported it as excellent (Fig. 2). Participation in the course directly improved the quality of their performance at work or in their studies (AFMEE 95 % and ASIO 97 %, Fig. 2B), meeting with the personal objectives of the majority of the trainees from both cohorts (AFMEE 99 % and ASIO 97 %, Fig. 2A). On average, trainees rated the quality of the lectures, case reports, and interactive discussions as 4.7/5 (AFMEE) and 4.6/5 (ASIO) (Fig. 2C). Table 1 details the trainees’ responses regarding the course’s benefits. Almost all trainees reported that the course met their objectives (AFMEE 99 %, ASIO 97 %). This is likely linked to the trainees’ reported ability to apply the acquired knowledge directly (AFMEE 75 % and ASIO 78 %) and indirectly (AFMEE 30 %, ASIO 42 %) in their daily work (Table 1). More than half of all students (AFMEE 65 %; ASIO 52 %) reported that the knowledge gained from the course enhanced their skills in caring for older people. Approximately one-fifth noted job or career promotions after completing the course (AFMEE 21 % and ASIO 17 %) (Table 1).

As described in a previous paper, we must note that the curriculum design and the content validity of the yearly program were consensually set up by the Scientific Board of the two-time-zone courses, which is composed of academic geriatricians and experts in gerontology. Among the topics proposed during the two courses evaluated, Table 2 displays the five most appreciated topics and the three least appreciated topics from each course. Topics like dementia and sarcopenia were consistently highly rated in both AFMEE (62 % and 53 %, respectively) and ASIO (72 % and 69 %, respectively). Session topics like osteoporosis, falls, and comprehensive geriatric assessment were also well received by AFMEE trainees (55 % and 50 %, respectively). ASIO trainees appreciated the sessions on falls, fractures, and nutrition (69 % and 62 %, respectively). Specific gerontology topics were less valued by AFMEE trainees (Table 2).

The post-course quality assessment also addressed practical aspects of the online training (Table 3). Nearly two-thirds of trainees in both regions utilized the recordings and presentation PDFs in preparation for the monthly exam. Most trainees spent up to five hours studying per session before taking the quiz, although some studied between five and ten hours (AFMEE 14 %; ASIO 23 %). Feedback regarding the ability to pay fees indicated that most trainees have limited financial resources to afford this type of training. (Table 3).

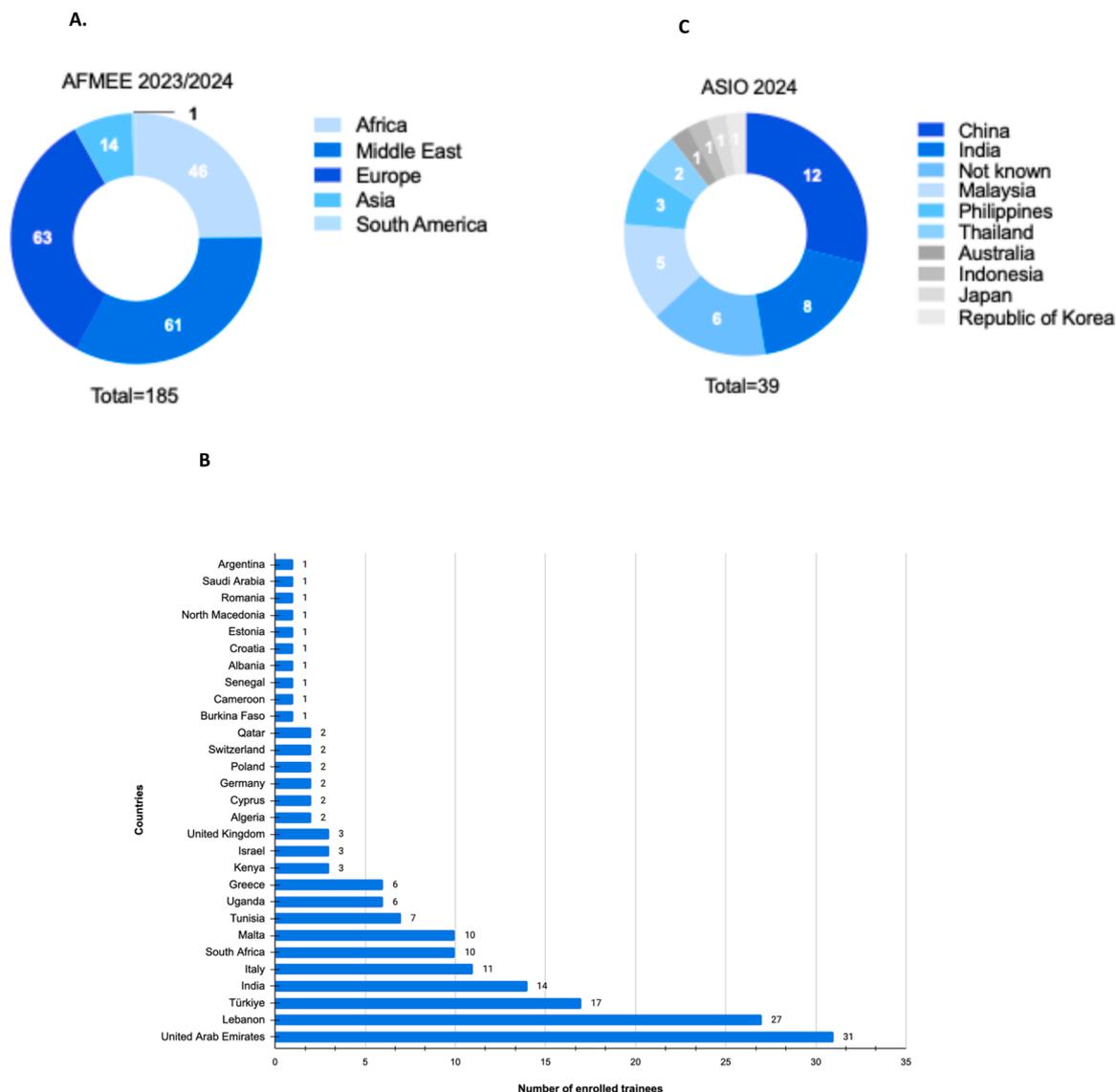


Fig. 1. Demographics of AFMEE and ASIO awardees. Panels A and B show the number of trainees awarded the AFMEE 2023/2024 course by geographic zone and by country within these regions. C. illustrates the number of trainees awarded the ASIO 2024 course by country.

3. Discussion

The post hoc evaluation of the AFMEE course’s first year and the ASIO course’s third year indicates that the trainees were satisfied and experienced benefits in their professional practice and career advancement.

The evaluation of the e-TRIGGER courses was introduced after the ASIO course had already completed two full years of teaching. These two years were the inaugural years of the experience, and much of our energy was focused on perfecting the organization, with less emphasis on evaluation to drive improvement. However, once the organization had been optimal, it became clear that in line with the "Define Measure, Analyse Improve Control" (DMAIC) Process described by the American Society for Quality ([American Society for Quality, 2025](#)), evaluation of the process was essential to identify weaknesses that could be remedied for future iterations of the course. For this reason, evaluation was introduced in 2024, corresponding to the end of the first year of the AFMEE program (May 2023 to April 2024) and the third year of the ASIO program (January to December 2024). Indeed, the DMAIC approach comprises five essential steps for quality improvement: Define (defining the opportunities for improvement and customer

requirements), Measure (measuring the performance), Analyse (identify causes of variation or poor performance), Improve (address and eliminate those causes), and Control (re-evaluate the improved process and assess future performance). This initial evaluation will, therefore, help us improve the process. We intend to continue the evaluations systematically after the courses in both regions to ensure that the improvements translate into improved performance.

The fewer enrolled trainees in the ASIO course 2024, compared to the AFMEE course (2023/2024), could be attributed to several factors. Firstly, after two years of experience with the ASIO course, it became clear that fees would need to be introduced to ensure its financial sustainability. Furthermore, it has been previously demonstrated that students who pay for educational classes are more engaged and motivated ([Goli et al., 2021](#)). Secondly, there were barriers to online payment, particularly in China, where many trainees faced difficulties processing the payment. Thirdly, limited scholarships were available to accommodate participants who could not pay the fees. To address these challenges, adjustments were made for enrolment in 2025 programs. We have since obtained funding from various non-profit foundations, enabling us to offer more scholarships to participants who face financial difficulties. In addition, participation in the second year of each course

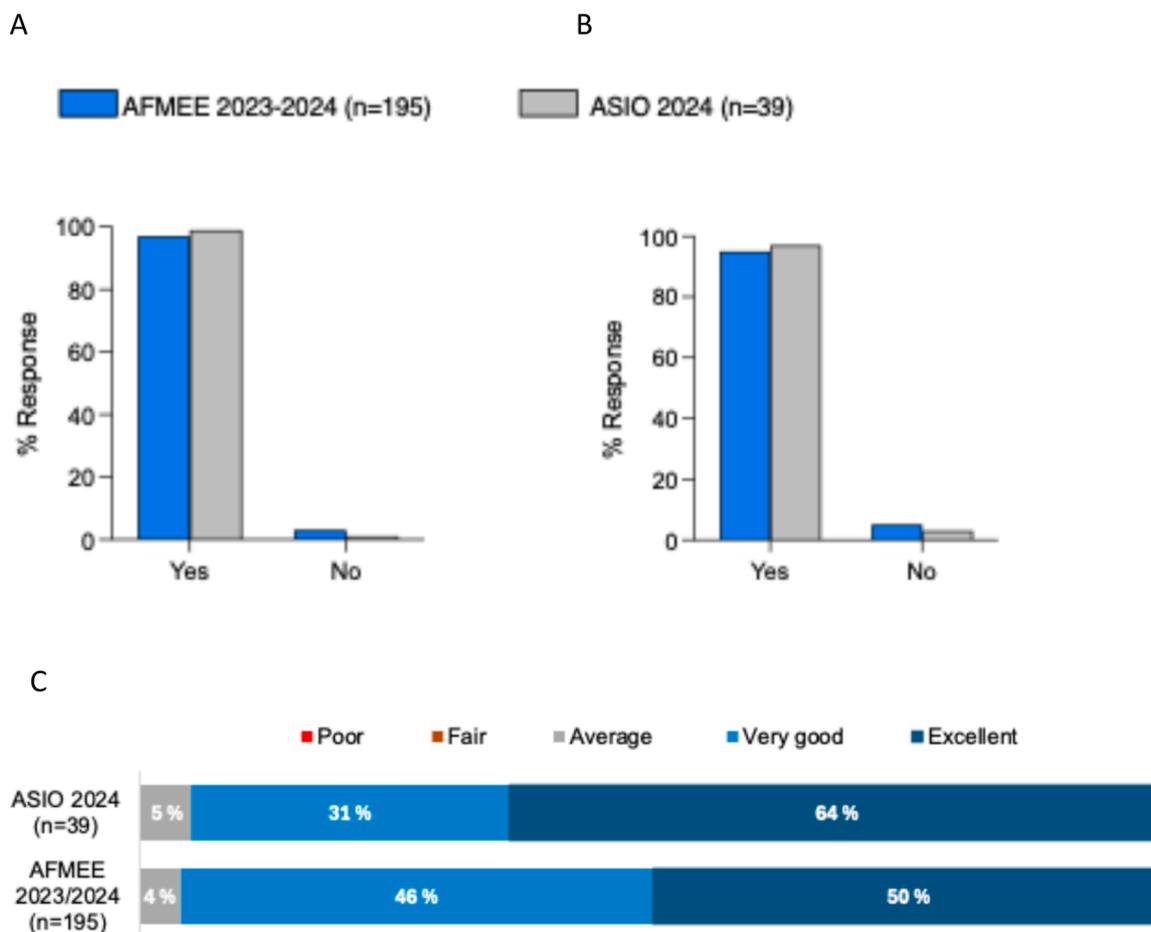


Fig. 2. Responses to questions regarding the benefits of the IAGG courses. A. Did this course meet your personal objectives? B. Has your participation in the course directly improved the quality of your performance at work or in your studies? C. How would you rate the general quality of the sessions for AFMEE 2023/2024 trainees (bottom) and ASIO 2024 (top) trainees? Rating of the general quality of the sessions as a percentage (Scale from 1–5, with 1 being poor, 2 fair, 3 average, 4 good, and 5 being excellent).

was boosted by alumni from previous cohorts who had not been successful the first time and were allowed to continue for a second consecutive year at no additional charge. Many alumni have chosen to participate in this way by serving as scholars, presenting case reports, moderating discussions, or returning as trainees to obtain a second or first certificate for those who did not meet the required criterion for an award at their first attempt. We believe that the positive outcomes of the course evaluations conducted by the trainees following each award ceremony have significantly contributed to the recruitment success of current programs.

The session topics and speakers of each AFMEE and ASIO program varied according to the unmet needs in each region. Each program is uniquely and consensually designed in collaboration with local scientific leaders, depending on the needs of each area. The results of this evaluation will help guide our choices of topics for future sessions. While we are attentive to include major topics of geriatrics in each course every year (such as frailty, dementia, sarcopenia, or falls), we strive nonetheless to ensure that topics are complementary over two consecutive years, to avoid repetition or boredom for participants who participate more than once a year. In this regard, our results show that the key informational needs of the awarded trainees included topics such as cognitive decline, dementia diagnosis, daily care practice of demented patients, and therapeutic approaches. The ethical issues linked to the care and management of demented patients and their caregivers were also highly rated. Other The proposed topics included home and institutional long-term care, incorporating the long-term management of multimorbidity, polypharmacy, and disability. Furthermore, trainees

expressed interest in learning more about the growing use of gerotechnology to enhance precision health prevention and management, which are essential in long-term care. Overall, trainees seemed particularly challenged by the attempt to address all aspects of geriatric medicine within 36 h of online formal training each year. As mentioned above, >5 h of personal work per session translates to 60 h of complementary involvement. New short courses are being developed on specific topics to complete the training, and e-TRIGGER alumni are encouraged to engage in these areas through free registration.

Regarding perspectives for the future of the course, the cost of registration fees has been and remains a particular concern to both the trainees and the organizers. Although educators, tutors, and scholars contribute voluntarily and receive no payment for their participation, there are nonetheless incompressible overhead costs related to the development and implementation of the course, the availability and maintenance of eLearning platforms and public websites (<https://iagg-fge.org>, <https://afmee.iagg-fge.org/>, <https://asio.iagg-fge.org/>), and the daily management of each course (including trainee enrolment management, content delivery, communication with students, technical support, etc.). As mentioned above, after evaluating the long-term financial implications for the e-TRIGGER programs, it was decided to introduce registration fees starting in 2024. The recruitment process was immediately affected by this new fee structure. Indeed, in assessing the impact of the cost structure on participants, 50 % of trainees from developing countries proposed registration fees below \$ 100 per year of training, and none suggested fees above \$ 600. This clearly illustrates the considerable challenge of conducting this type of training without

Table 1
Trainees 's Estimated Benefits from the Courses.

Courses	AFMEE 2023/2024	ASIO 2024
Number of responses (%)		
If you have benefited from the knowledge you acquired through the online course, please indicate how?		
I have directly used it in my work	146 (75 %)	30 (77 %)
I have used it indirectly in my work	60 (31 %)	16 (41 %)
It helped me change my job	23 (12 %)	5 (13 %)
It helped me, or it may help me to obtain a promotion	41 (21 %)	6 (15 %)
I have used it for my studies/thesis	57 (29 %)	8 (21 %)
I have not actually used the knowledge but have gained personal insight into geriatrics and gerontology	21 (11 %)	8 (21 %)
I have not used the knowledge yet, but I intend to use it in my work and/or studies	17 (9 %)	5 (13 %)
I plan to introduce this field of Geriatrics in my institution after having taken this course	46 (24 %)	9 (23 %)
I plan to research further and specialize in this field of Geriatrics and/or Gerontology after having taken this course	78 (40 %)	18 (46 %)
I have benefited in other ways	71 (36 %)	11 (28 %)
Comparing your current knowledge of Geriatric Medicine and Gerontology with your knowledge before taking this course, please indicate one or more of the following outcomes.		
The course added to the knowledge I already had in this field	143 (73 %)	27 (69 %)
The course introduced me to this field	22 (11 %)	5 (13 %)
The course has improved my skills in caring for older adults	126 (65 %)	21 (54 %)
The course opens new horizons in Gerontology and Geriatrics	87 (45 %)	18 (46 %)
Not applicable	3 (2 %)	1 (3 %)

Table 2
2023/24 AFMEE and 2024 ASIO e-TRIGGER Post-course surveys. Which are the most and least appropriate topics/sessions for you?.

The most appreciated topics/sessions			
2023/4 AFMEE e-TRIGGER		2024 ASIO e-TRIGGER	
62 %	Mild cognitive impairment and dementia	72 %	Mild cognitive impairment and dementia
55 %	Osteoporosis and falls	69 %	Sarcopenia and frailty
53 %	Sarcopenia and frailty	69 %	Osteoporosis and falls
50 %	Comprehensive Geriatric Assessment	62 %	Nutrition and metabolic disorders
43 %	Nutrition and metabolic disorders	59 %	Comprehensive Geriatric Assessment
The less appreciated topics/sessions			
33 %	Infections	40 %	Cancers in older adults
23 %	Three main gerontological issues	35 %	Cardiovascular diseases
22 %	Health care system	35 %	Geroscience

independent private funding.

Looking to the future perspectives of the e-TRIGGER programs, the IAGG Federation of Geriatric Education has successfully established high-quality online training in Gerontology and Geriatrics across two densely populated time zones (AFMEE and ASIO). Recruiting 2025 e-TRIGGER trainees is pivotal for the continued success of current course offerings, as it reflects the consistent need for and interest in online education in geriatrics and gerontology for underserved populations within the current medical education system.

Table 3
Trainees' Practical Concerns.

	AFMEE 2023/2024	ASIO 2024
Number of responses (%)		
What was your preferred mode of access to the study materials?		
I mainly used the PDF of presentations	60 (31 %)	7 (18 %)
I accessed the recordings	6 (3 %)	1 (3 %)
Both	129 (66 %)	31 (79 %)
How much time did you allocate to each Session (not counting the 3-hour live Session), i.e., Reading/ Discussion Forums/ Watching videos for exam revision?		
None (I only attended the 3 h session)	5 (3 %)	1 (3 %)
<1 h	19 (10 %)	5 (13 %)
1 - 5 h	133 (68 %)	26 (67 %)
5 - 10 h	28 (14 %)	9 (23 %)
10 - 15 h	4 (2 %)	2 (5 %)
Over 15 h	8 (4 %)	2 (5 %)
Considering your country's average annual incoming salary, how much would you be willing to pay for a 12-month IAGG course?		
Nothing, I would be able to participate only if the course were free	76 (40 %)	8 (21 %)
Maximum fee of 100 Euros/US dollars	65 (34 %)	15 (38 %)
A fee between 100 - 300 Euros/US dollars	40 (21 %)	11 (28 %)
A fee above 600 Euros/US dollars	11 (6 %)	5 (13 %)
Would you recommend this course to others?		
Yes	185 (100 %)	38 (97 %)
No	0(0 %)	1 (3 %)
Would you enroll for other courses IAGG e-TRIGGER offers (new topics/content)?		
Yes	188 (98 %)	35 (90 %)
No	4 (2 %)	4 (10 %)

Our colleagues in Central and Latin America are excited to launch the third iteration of the TRIGGER program in Spanish (LATAM), designed to meet the interdisciplinary needs of healthcare professionals committed to caring for older adults in the region. Building on the successes of the AFMEE and ASIO courses, this new training is scheduled to begin in June 2025.

Additionally, in response to alumni feedback, course organizers plan to introduce complementary courses. There is a pressing need for shorter training blocks focused on specific topics, such as long-term care delivery and management for older adults with multimorbidity, disability, and polypharmacy. These initiatives will notably benefit nurses in resource-limited settings. Additionally, specialized mini-training sessions are being considered on topics such as "practical care for patients with dementia," "adopting new care technologies," and "enhanced medication management and use."

The long-term sustainability of the e-TRIGGER programs is central to their future development and expansion. The proven success of these programs is, in and of itself, an instrument for improving the care of older adults and will contribute to alleviating the burden on front-line healthcare professionals, while also building a more resilient healthcare system. This is essential, given the shortage of healthcare workers combined with the oncoming "silver tsunami" that is population aging (Michaeli et al., 2024; Mitchell, 2014). Moreover, the e-TRIGGER courses contribute significantly to the UN Sustainable Development Goals, specifically goals 3 (Good health and well-being), 4 (Quality education), 5 (Gender equity), and 10 (Reduced inequalities), and in

doing so contribute to the WHO 14th General Program of Work (GPW 14) and Global Health Strategy for 2025–2028.

4. Limitations of the study

The authors must acknowledge that the questionnaire was sent at the end of the 12-month sessions. Awardees responded significantly more than unsuccessful trainees. Since the training lasts 12 months, approximately one-third of the registered trainees discontinued the course after failing one or two monthly quizzes. Even when we reached out to them to understand why they did not continue their training, they did not respond. A third limitation is the absence of a pre- and post-knowledge assessment. Moreover, we question how the evaluation of clinical practice can be undertaken, given the diversity of the participants' countries of origin, which includes >30 countries. Indeed, a second evaluation conducted one year after the end of the course will be extremely interesting for gaining a better understanding of the training's usefulness for the participants' clinical practice and careers.

5. Conclusion

In conclusion, the evaluation of two iterations of the e-TRIGGER program by its alumni shows that the program is highly successful and beneficial to most respondents. The programs are achieving their overarching goal of bringing education in geriatrics and gerontology to a broader audience of healthcare professionals from all horizons who work with older adults in their daily practice. Financial sustainability remains a challenge for the future.

AFMEE e-TRIGGER Board Members: Prof Mario Barbagallo (IT), Prof. Nasser Al Dhagri (SA), Prof Dilek Aslan (TR), Prof. Joel Belmin (FR), Prof. Rosette Bonello (MT), Prof. Mamadou Coumé (SN), Dr Leon Geffen (ZA), Dr Radhouane Gouiiia (TN), Prof Hanadi Khamis Mubarak (QT), Jaco Hoffman (ZA), Mohamed Kather (EG), Elias Stephen (LN), Mouna Snoussi (TN) and Nicoal Veronese (IT)

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Ethic statement

No Ethical Issues.

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CRedit authorship contribution statement

Rafaela. F. da Silva: Conceptualization. **Fiona. Ecartnot:** Formal analysis, Conceptualization. **Jane. Barratt:** Writing – review & editing, Resources, Data curation. **Joel. Belmin:** Writing – original draft, Data curation. **Jean-Pierre. Kraehenbuhl:** Writing – review & editing, Supervision, Conceptualization. **Jean-Pierre. Michel:** Validation, Supervision.

Declaration of competing interest

No Conflict of interest.

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Supplementary materials

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