



# Traumatic Brain Injury Programme Open Online Courses Evaluation Report

**February 2020**

## Summary

From October 21<sup>st</sup>, 2019 to November 30<sup>th</sup>, 2019, Physiopedia successfully delivered a Massive Open Online Course (MOOC) entitled “Traumatic Brain Injury Programme” via the Physioplus online learning platform. This MOOC aimed to provide a basic theoretical understanding of the management of traumatic brain injuries (TBIs) to equip physiotherapists with sufficient knowledge to manage a person following a traumatic brain injury. The programme consisted of four courses, which included: 1) Introduction to TBIs, 2) the assessment and classification of TBIs, 3) management of TBIs assessing impairments and 4) an overview of the management of TBIs and specific therapeutic interventions for TBIs. In each course, the learner completed the required learning activities and a final quiz that tested the knowledge gained from the course. To complete the overall TBI programme, the learner had the option to submit and pass a written assignment.

**Course Type:** Free, Open, Online

**Institution:** Physiopedia

**About this course:** the MOOC aimed to provide a basic theoretical understanding of the management of traumatic brain injury in order to equip physiotherapists with sufficient knowledge to manage a person following a traumatic brain injury. The course provided the learner with information on how to: assess impairments, activity limitations and participation restrictions, set appropriate goals of treatment, formulate evidence-informed treatment plans, and implement and evaluate treatments.

**Target audience:** these courses were written for physiotherapy clinicians, students, and assistants. Other healthcare professionals interested in this subject were also welcomed to participate.

**Time commitment:** 16 hours over four weeks (with an optional extra 8 hours)

**Date:** October 21<sup>st</sup> – November 30<sup>th</sup>, 2019, (the course remains available on the Physioplus platform to all members)

**Requirements:** participants were required to complete online learning activities, engage with additional resources, and complete the course evaluations (quizzes).

**Assessment:** there was a final quiz, and participants could optionally complete a final assignment to demonstrate the knowledge gained from the four courses.

**Awards:** 4 course completion certificates awarding a total of 18.3 Physioplus (P+) points.

**Accreditation:** each of the programme was accredited by Federation of State Boards of Physical Therapy (ProCert; 4CCUs) and South African Society of Physiotherapy (6 General CEUs Level 1).

**Registrations:** 20,522

**Countries represented:** 185

## Acknowledgments

The Traumatic Brain Injury MOOC was developed and delivered by Physiopedia and interested individual stakeholders following a private donation that specifically asked to educate physiotherapists globally in the management of traumatic brain injuries.

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## Introduction

During October and November 2019, Physiopedia ran its 8<sup>th</sup> Massive Open Online Course (MOOC) entitled the “Traumatic Brain Injury Programme.” The MOOC was delivered as a programme of four courses and an optional written final assignment.

The Traumatic Brain Injury Programme aimed to provide a basic theoretical understanding of the management of traumatic brain injuries (TBIs) to equip physiotherapists with sufficient knowledge to manage a person following a traumatic brain injury. The course included education on assessing impairments, activity limitations and participation restrictions, setting appropriate goals for treatment, formulating an evidence-based treatment plan, implementing treatment, and evaluating treatment success.

The four-week-long courses presented different topics through a variety of learning activities to suit all learning styles. The required learning activities within each course were developed to take between 4-6 hours depending on the participant's learning style and optional activities were provided should the participant wish to take part in additional learning. A short orientation period before the course started provided participants with an opportunity to become familiar with the delivery platform and the topic via the provided pre-course resources.

The course was delivered through the Physioplus (P+) online learning platform; an innovative platform specifically developed to provide online education and support learners with a personalised learning dashboard. For each course, the related learning activities were released on a specific course page. Participants engaged with each course learning activity, and their activity was recorded and displayed in their personal learning dashboard.

A course was considered complete once the learner finished all required learning activities and successfully passed the final quiz that tested knowledge gained each week. There was also an optional written assignment designed to demonstrate the knowledge gained from all four courses. On completion of each course the participants had the option to download a completion certificate and export a record of their learning from their activity log.

This report evaluates the experiences and engagement of the participants on the Traumatic Brain Injury MOOC.

## **1.0 About the Programme of Courses**

### ***1.1 Aim***

The programme of four courses aimed to provide a basic theoretical understanding of the management of traumatic brain injury in order to equip physiotherapists with sufficient knowledge to manage a person following a traumatic brain injury. The programme included knowledge on assessing impairments, activity limitations, and participation restrictions, setting appropriate goals of treatment, formulating an evidence-based treatment plan, implementing treatment and evaluating its success.

The global network formed through this course will allow for shared knowledge and experiences to support good health care and a better quality of life for individuals with a traumatic brain injury around the world

### ***1.2 Learning Objectives***

At the end of this programme of courses, participants were able to:

1. Discuss the current burden of traumatic brain injury
2. Understand the risk factors and complex causes for traumatic brain injury
3. Understand and recognise the various clinical presentations of traumatic brain injury
4. Select appropriate assessment techniques and outcomes measures for traumatic brain injury
5. Evaluate the information gathered from the assessment of an individual with a traumatic brain injury in order to formulate a treatment plan
6. Demonstrate clinical reasoning when presented with impairments related to traumatic brain injury
7. Demonstrate an understanding of the range of therapeutic interventions for the management of traumatic brain injury
8. Critically analyse the literature related to traumatic brain injury assessment, management, and rehabilitation

### ***1.3 Intended Audience***

This course was suitable for all healthcare professionals but aimed at physiotherapy professionals including clinicians, assistants, and students. It was also of interest to other healthcare professionals (e.g. prosthetists, orthotists, nurses, occupational therapists, speech therapists, medical doctors) who were motivated to upgrade their knowledge on traumatic brain injuries.

### ***1.4 Cost to participants***

The course was free to all participants who completed the course within the 8-week timeframe the course ran and remains free to all residents of low-income countries.

### ***1.5 Course availability***

The programme of courses started on October 21<sup>st</sup>, 2019 when the first course was made available. A new course was released each Monday for another 3 weeks. Participants had until November 30<sup>th</sup>, 2019 to complete the courses under their free access to Physioplus. The course remains available on the Physioplus platform to members; membership is free to individuals from low-income countries and available at a discounted rate to individuals in middle-income countries.

### ***1.6 Courses, Course Awards and Accreditation***

Four individual courses were created for the Traumatic Brain Injury (TBI) Programme.

Course 1: Introduction to Traumatic Brain Injury

Course 2: Assessment of Traumatic Brain Injury

Course 3: Management of Traumatic Brain Injury

Course 4: Specific Therapeutic Interventions for Traumatic Brain Injury

Physiopedia provided course completion certificates to all participants that passed each of the four courses within the programme. The programme was accredited by Federation of State Boards of Physical Therapy (ProCert; 4CCUs) and South African Society of Physiotherapy (6 General CEUs Level).

## 2.0 Demographics of the Participants

### 2.1 Country

20,522 participants formally registered for the TBI Programme before the end date of November 30<sup>th</sup>, 2019 representing 185 countries. The top ten represented countries can be found in Table 1. A full list of the countries and number of participants from each country can be found in Appendix 1.

**Table 1: Top ten represented countries**

Country	N
India	3565
United States of America	1858
Nigeria	1820
Canada	1587
Australia	1513
Saudi Arabia	1141
United Kingdom	1120
Pakistan	763
Egypt	629
South Africa	394

Data are numbers (N)

### 2.2 Profession

**Table 2: Participants' professional backgrounds**

Profession	N (%)
Physiotherapy / Physical Therapy	16117 (78.5%)
Occupational Therapy	987 (4.8%)
Medical Doctor	898 (4.4%)
Nurse	484 (2.4%)
Prosthetics/Orthotics	117 (0.6%)
Other	1919 (9.3%)

Data are numbers (N) and percentage of total participants (%)



### **2.3 Role**

**Table 3: Current professional roles held by participants**

<b>Professional Role</b>	<b>N (%)</b>
Clinician	12264 (59.8%)
Student	4881 (23.8%)
Educator	843 (4.1%)
Assistant	830 (4.0%)
Researcher	400 (1.9%)
Manager	310 (1.5%)
Other	994 (4.9%)

Data are numbers (N) and percentage of total participants (%)

### **2.4 Years of experience**

**Table 4: Participants' years of professional experience**

<b>Experience</b>	<b>N (%)</b>
No experience	5938 (29.0%)
Less than one year	5550 (27.0%)
One to five years	5536 (27.0%)
Greater than five years	3498 (17.0%)

Data are numbers (N) and percentage of total participants (%)

### **2.5 Participants reasons for registering for the course**

**Table 5: Participants' reasoning for participating in the TBI Programme**

<b>Reason</b>	<b>N</b>
To develop knowledge	17159
To improve clinical skills	15459
To try out a Physiopedia course	5269
To receive CEUs or CPD points	3792

Data are numbers (N). Participants were able to choose more than one reason for participating.

## 3.0 Engagement of the Participants

### 3.1 Platform

The TBI Programme and the associated four courses were delivered on Physioplus. Thirty-six pages on Physiopedia were either created or updated for the learners to use during these courses. The related course pages received 91,221 unique views before the final date of the supported course (November 30<sup>th</sup>, 2019).

### 3.2 Learning Activities

4,028 learners began Course 1 (Introduction to Traumatic Brain Injury) of the Traumatic Brain Injury Programme, 39% of these learners completed the first course. The number of learners who began and completed each of the four courses can be found in Table 6.

**Table 6: Course initiation and completion**

	Course 1	Course 2	Course 3	Course 4	TBI Programme
Learners who started	4,028	1,822	1,319	1,088	502
Learners who completed	1,584	1,118	953	803	3

Data are numbers (N) of learners

The four courses included a total of 53 required learning activities (full list of learning activities can be found in Appendix 2). To complete each course participants were required to fully engage with all the related required learning activities (Appendix 2) and pass the course quiz. To pass the final course quiz learners had to receive a grade of 80% or higher. Once the quiz and all learning requirements were successfully completed, Physioplus points (P+; equivalent to hours of learning) and a completion certificate were awarded. A break down of the number of required learning activities and the number of learning activities that were completed in each course can be found in Table 7.

**Table 7: Learning activities logged and Physioplus points awarded for each course**

	Course 1	Course 2	Course 3	Course 4
Required learning activities	10	14	12	11
Learning activities logged	28,900	18,297	13,802	11,608
Total Physioplus points awarded	8,663	5,386	4,729	3,991

### **3.3 Discussion Forum**

Each course contained an optional 3-5 discussions. Learners were encouraged to engage with knowledge users from around the world on different topics associated with the course. These discussions were intended to provide a rich learning experience to the learner through self-reflection and community engagement.. Table 8 presents the number of discussion posts for each discussion in each of the four courses. There were a total of 6,260 discussion posts over the course of the programme.

**Table 8: Discussion forum posts**

	Course 1	Course 2	Course 3	Course 4
Discussion 1	1431	474	363	228
Discussion 2	619	370	295	231
Discussion 3	410	361	279	76
Discussion 4	227	368	278	-
Discussion 5	-	137	113	-
Total	2687	1710	1328	535

Data are number (N) of individual posts.

### **3.4 Final Assignment**

An optional final assignment was designed to have the learner reflect on their learning and use the knowledge gained throughout the courses. Participants were asked to follow the [assignment guidelines](#) on Physiopedia and the Physiopedia team assessed the submitted assignments. To successfully pass the final assignment, learners needed to demonstrate: evidence of learning from the course, academic skill with evidence-based writing, and proper referencing. Assignments had to be written in English. A total of nine assignments were submitted, seven of which were patient case studies, and two were knowledge translation clinical guidelines. Of the nine submissions, three met the assignment requirements and were rewarded with a passing grade.

### **3.5 Engagement versus completion**

Of the 20,522 learners who registered to take part in the TBI Programme, 4,028 (20% of register learners) began the first course before November 30<sup>th</sup>. Of the 4,028 learners that began the first course, 803 completed all four courses (20% of engaged learners). Table 9 displays the number of learners who began and completed the first and final course and the optional final assignment.

**Table 9: Engagement and completion of the TBI Programme**

	<b>N</b>
Learners who registered to take part in course	20,522
Began first course	4,028
Received first course completion certificate	1,584 (39%)
Started the final course	1,088 (27%)
Received final course completion certificate	803 (20%)
Began the final optional TBI Programme	502 (12%)
Completed optional final assignment	3 (0%)

Data are numbers (N) and percentage of total participants who began the first course (%)

## 4.0 Participant Feedback

After the completion of each of the four courses, learners had the option to share their feedback on the course. The learners were asked to rate their overall opinion of the course on a 5-point scale ranging from excellent to poor. 82-86% of the respondents rated the courses as either great or excellent. Figures 1 to 4 display the results for each course.

Figure 1: Overall course rating for the Introduction to Traumatic Brain Injury Course (n=920).

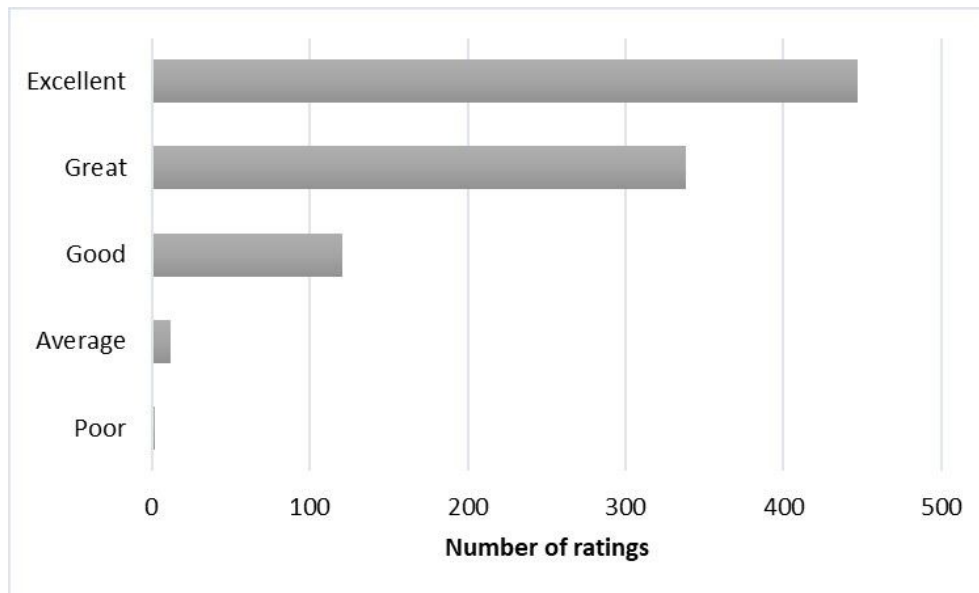


Figure 2: Overall course rating for the Assessment of Traumatic Brain Injury Course (n=516).

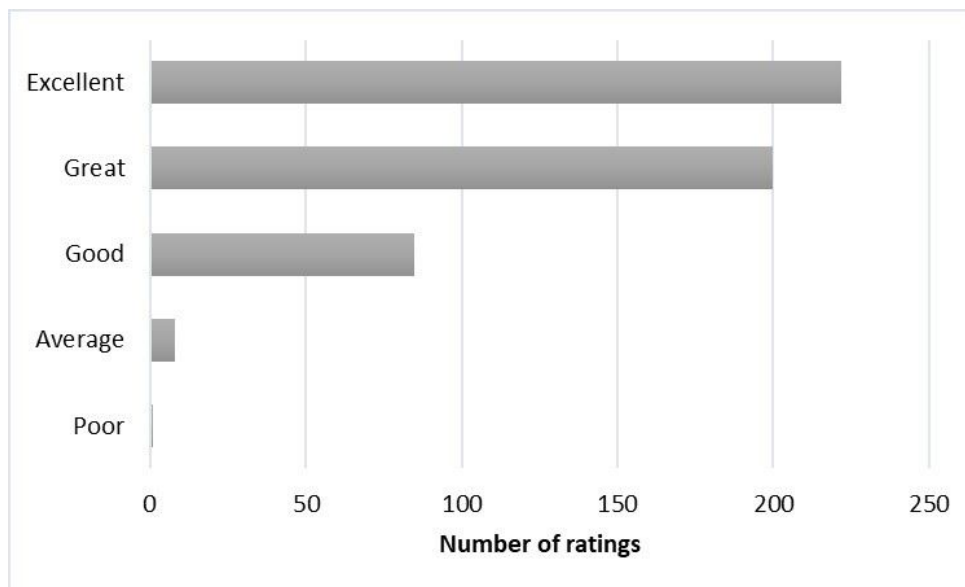


Figure 3: Overall course rating for the Management of Traumatic Brain Injury course (n = 215).

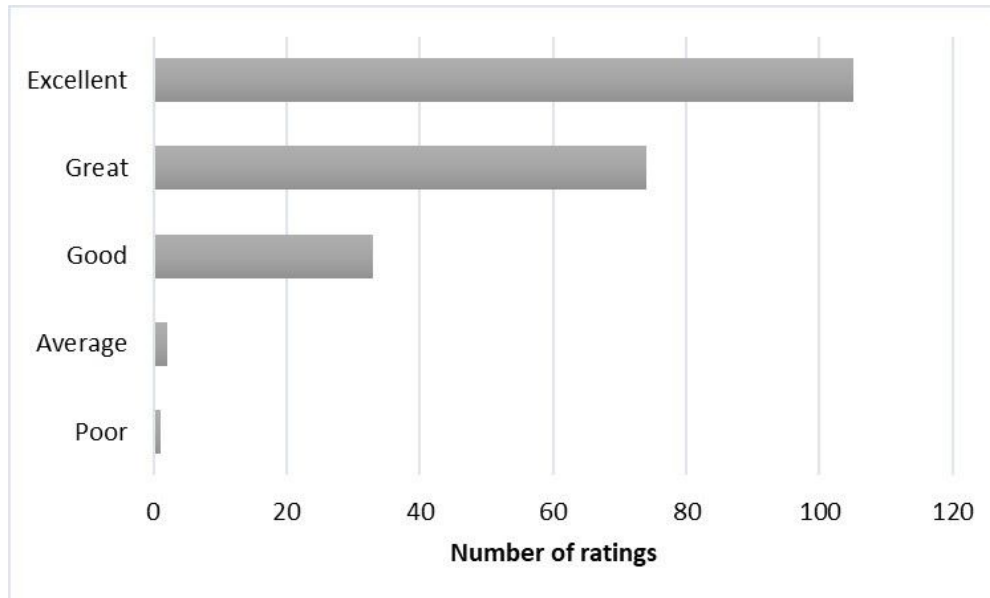
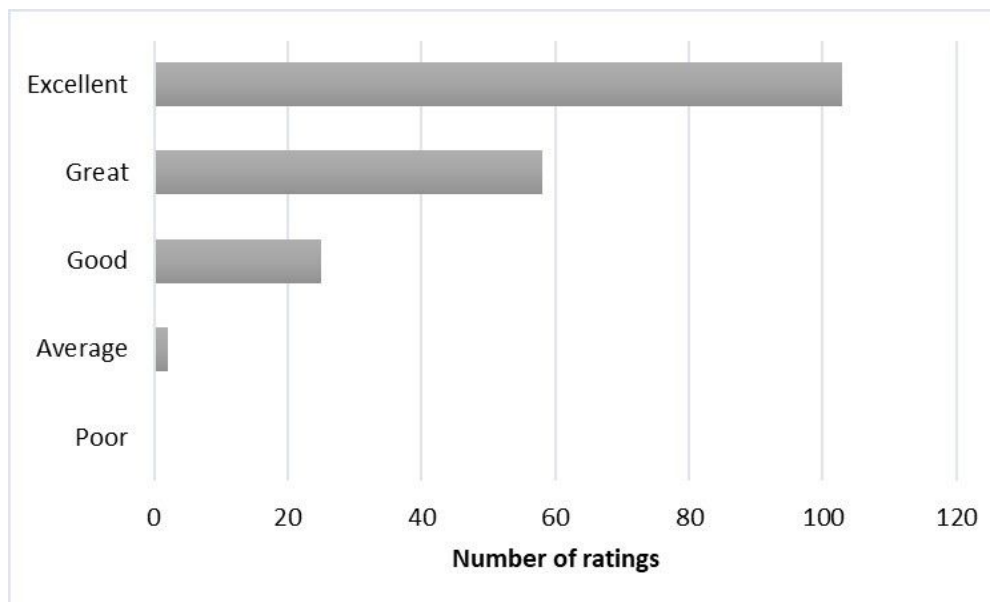


Figure 4: Overall course rating for the Specific Therapeutic Interventions for Traumatic Brain Injury (n= 188).



## ***4.1 Qualitative Data***

Learners were provided the opportunity to give qualitative feedback on their experience with each course. When asked, “what were the best elements of this course” Overall, the learners reported that they enjoyed both the written and visual media materials in the courses. The learners reported that the information provided was presented clearly and in an engaging way. In the Introduction to TBI course, the learners appeared to agree that the content on anatomy and physiology was both beneficial to their learning. From feedback from the assessment, management, and treatment TBI courses (Course 2-4), it was evident that learners enjoyed the content that was offered and felt the course enhanced their current level of understanding.

When asked “how could this course be improved” learners requested that the course be offered for a longer period of time. Learners felt that having access to more case studies would have been helpful for their learning. A majority of participants stated that they would have liked to have more video content in the courses and less written material. There were also multiple suggestions to include more quizzes throughout the course to enhance understanding.

## ***4.2 Impact on clinical practice***

In the evaluation, learners were asked to “describe any changes to your clinical practices that you have made or intend to make as a result of participation in this course.” Overall it appears that the TBI Programme was able to improve the learners' awareness of the role physiotherapists can play in the assessment and management of TBIs. Learners emphasized that they acquired a new appreciation for how to incorporate the ICF model into the care they provide individuals who have sustained a TBI. Illustrative sample comments on the impact of clinical practice can be found in Appendix 4.

## **5.0 Conclusion**

Physiopedia successfully delivered a MOOC on Traumatic Brain Injury Programme over 4 weeks in October/November 2019. Over 4,000 learners from around the world completed one or more of the courses provided within the program. It is evident from learners' feedback that learners gained a new appreciation for the role physiotherapists play in the assessment, management, and treatment of individuals who have sustained a TBI. It is apparent from the course registration data that this course was a topic that was important to physiotherapists and healthcare providers. Future Physiopedia MOOCs will build on the feedback received from learners in this programme to improve resources, attrition, and engagement throughout the entire course.

## Appendix 1 – Course participants demographics

**Table 10: Number of participants from the 185 represented countries**

India	3565	Oman	33	Macedonia	5
United States	1858	Norway	33	Kazakhstan	5
Nigeria	1820	Papua New Guinea	32	Brunei Darussalam	5
Canada	1587	Portugal	31	Barbados	5
Australia	1513	Colombia	31	Bahamas	5
Saudi Arabia	1141	China	30	Azerbaijan	5
United Kingdom	1120	Malawi	29	Uzbekistan	4
Pakistan	763	Poland	28	Turks and Caicos Islands	4
Egypt	629	Namibia	26	Togo	4
South Africa	394	Kuwait	26	Sierra Leone	4
Malaysia	302	Belgium	26	Saint Lucia	4
Sudan	297	Bhutan	25	Mozambique	4
New Zealand	291	Chile	24	Guernsey	4
Myanmar	287	Switzerland	23	Eritrea	4
Singapore	222	Russian Federation	23	Cayman Islands	4
Kenya	220	Hungary	23	Cambodia	4
Philippines	194	Slovakia	21	Bosnia and Herzegovina	4
Ghana	151	Malta	20	United States Minor Outlying Islands	3
Turkey	149	Denmark	20	Tuvalu	3
United Arab Emirates	137	Germany	19	Senegal	3
Afghanistan	136	Czech Republic	18	Panama	3
Nepal	133	Sweden	17	Niger	3



Jamaica	133	Somalia	17	Luxembourg	3
Palestinian Territory	117	Puerto Rico	17	Liberia	3
Qatar	115	Botswana	16	Gibraltar	3
Jordan	115	Estonia	15	Gambia	3
Ukraine	111	Bahrain	15	Antigua and Barbuda	3
Ireland	110	South Sudan	14	Algeria	3
Sri Lanka	100	Peru	14	Uruguay	2
Uganda	88	Guyana	14	South Georgia and the South Sandwich Islands	2
Lebanon	88	Cyprus	14	Netherlands Antilles	2
Zambia	77	Bulgaria	14	Mongolia	2
Spain	74	Bermuda	14	Monaco	2
Indonesia	70	Libya	13	Micronesia, Federated States of	2
Syrian Arab Republic	68	Taiwan, Republic of China	12	Dominica	2
Thailand	67	Lithuania	12	Cape Verde	2
Tanzania, United Republic of	66	Latvia	12	Belarus	2
Israel	65	Korea, Republic of	12	Armenia	2
Iran, Islamic Republic of	65	Slovenia	11	Vanuatu	1
Bangladesh	58	Iceland	11	Timor-leste	1
Brazil	56	Burundi	11	Seychelles	1
Yemen	54	Japan	10	Saint Kitts and Nevis	1
Netherlands	53	Venezuela	9	Reunion	1
Romania	51	Haiti	9	Pitcairn	1

Mexico	51	Swaziland	8	Montenegro	1
Zimbabwe	50	Georgia	8	Moldova, Republic of	1
Italy	50	Congo, The Democratic Republic of the	8	Martinique	1
Finland	46	Benin	8	Macao	1
Greece	44	Suriname	7	Lao People's Democratic Republic	1
Trinidad and Tobago	43	Madagascar	7	Kiribati	1
Rwanda	42	Ecuador	7	Holy See (Vatican City State)	1
Cameroon	42	Mauritius	6	Guatemala	1
Iraq	41	Dominican Republic	6	Guadeloupe	1
Ethiopia	41	Cuba	6	Grenada	1
France	40	Côte d'Ivoire	6	Gabon	1
Hong Kong	38	Costa Rica	6	Congo	1
Fiji	38	Austria	6	Belize	1
Albania	38	Tunisia	5	Aruba	1
Argentina	37	Serbia	5	Andorra	1
Croatia	35	Morocco	5	American Samoa	1
Vietnam	33	Maldives	5	Åland Islands	1

Numbers represent the number of participants registered for the TBI MOOC from that particular country

## Appendix 2 – Required learning activities

### 2.1 Course 1: Introduction to Traumatic Brain Injury

	Learning activity	Delivery medium
1	Introduction with Rachael Lowe and Anna Zeimer	Video
2	Overview of Traumatic Brain Injury	Reading
3	TBI patient story	Video
4	Epidemiology of Traumatic Brain Injury	Reading
5	Convention on the Rights of Persons with Disabilities	Reading
6	Prevalence or incidence of TBIs around the globe	Discussion forum
7	Brain anatomy and pathophysiology of TBIs	3 Readings
8	Anatomy of the brain and implications following a TBI	Video
9	Medical Complications in Traumatic Brain injury	Reading
10	TBI – Case Study Part 1	Reading
11	Introduction to TBI Quiz	Quiz
12	Course Reflection	Discussion forum

### 2.2 Course 2: Assessment of Traumatic

	Learning activity	Delivery medium
1	International Classification of Functioning, Disability and Health (ICF)	Reading
2	ICF and TBIs	Reading
3	Neurological Physiotherapy	Reading
4	ICF Framework and the management of individuals with TBI	Discussion forum
5	Neurological Assessment of Traumatic Brain Injury	2 Readings
6	Classification of TBI	Reading
7	Disorders of Consciousness	Reading
8	Interview with Jennifer Quartano	Video
9	Challenges in assessment and classification of TBI	Discussion forum
10	Outcome Measures for TBI	Reading
11	Outcome Measures for TBI globally	Discussion forum
12	Goal Setting for TBI	Reading

13	Goal Setting for TBI with Dr. Heechin Chaw	Video
14	TBI Case Study Part 2	Reading
15	TBI Case Study – Outcome measures discussion	Discussion forum
16	Assessment of TBI Quiz	Quiz
17	Course Reflection	Discussion forum

### ***2.3 Course 3: Management of Traumatic Brain Injury***

	<b>Learning activity</b>	<b>Delivery medium</b>
1	Multidisciplinary/Interdisciplinary Team and the Role of the Physiotherapist	2 Readings
2	Interdisciplinary Team in the management of TBIs	Discussion forum
3	Clinical Guidelines in Traumatic Brain Injury Management	Reading
4	Clinical guidelines in physiotherapy practice	Discussion forum
5	Principles of physiotherapy management of individuals with TBI	2 Readings
6	The role of PT in TBI care	Video
7	PT and TBI management over the phases of care	Discussion forum
8	Special considerations in the management of TBI	5 Readings
9	TBI Case Study Part 3	Reading
10	Case study discussion: treatment and discharge planning	Discussion forum
11	Outcome Measures for Wheelchair and Seating Provision: A Critical Appraisal	Reading
12	Management of TBI Quiz	Quiz
13	Course Reflection	Discussion forum

### ***2.4 Course 4: Specific Therapeutic Interventions for Traumatic Brain Injury***

	<b>Learning activity</b>	<b>Delivery medium</b>
1	Overview of Therapeutic Interventions	2 Readings
2	Respiratory Management	2 Readings
3	Contracture Management	Reading
4	Falls and TBI	Reading
5	Physiotherapists role in preventing falls	Discussion forum

6	Exercise prescription with individuals who have suffered a TBI: an interview with Dr. Leanne Hassett	Video
7	TBI Case Study Part 4	Reading
8	Case study discussion: Physical Activity	Discussion forum
9	Final Quiz: Management of TBI Quiz	Quiz
10	Course Reflection	Discussion forum

## Appendix 3: Example Testimonials

### 3.1 Introduction to TBI testimonials

1. I thought the presentation of the course and the training was excellent, the sections on motivation and performance improvement were very beneficial.
2. Proud to be a part of Physioplus! The best place to learn and gain knowledge for physios!
3. The brain is such an amazing organ, but so complex! This course helped me place it all in context and understand how it's all interconnected.
4. This course gave me the opportunity to learn and think about so many important things we have to take into account with TBI patients
5. First please permit me to express my appreciation to the Physioplus team and everyone who has actively or inactively contributed to this amazing course. The introduction part of the course was so good and full of important information. I have enjoyed and learned a lot from it. Thank you Physioplus once again.
6. What a great course for those wanting to familiarise themselves or update their knowledge in understanding and responding to Traumatic Brain Injury. The whole programme depends on strong, evidence-based background knowledge and the Introduction course is an exemplar
7. I so appreciate all the time and effort that must go into creating a course of this level. Physioplus is such a great platform for continual learning.
8. Amazing presentation, relevant and evidence based information.
9. This is a great course that uses a multi-modal approach to learning with text, videos and interaction with other peers that can be completed at your own pace.
10. This course is absolutely amazing, refreshing and clinically friendly!
11. This course is a treasure for clinicians in the business of treating patients who love to improve their knowledge and skill and desire evidence-based treatment in their practice irrespective of what specialty in the medical profession you may belong to. This course is well worth your time!
12. TBI from Physioplus is a course every professional should take. I have also done the Physioplus SCI courses and these two experiences have changed my perception of assessing and managing such patients.
13. Well designed and structured course. I particularly love the discussion forum!
14. I'm so grateful to be part of this TBI course! Indeed, Physioplus provides in-depth understanding, shared knowledge and unity of healthcare workers will also give opportunities to provide optimal management and treatment with TBI. Salamat! :)
15. You want a clearly structured flow of information about everything related to TBI? go ahead and start this course!
16. I love this course. Great information delivered in an engaging way!
17. The BEST introductory course for a PT working with TBI patients.
18. A fantastic course, a lot of information, and given in all sorts of formats. The discussion forums helped keep me on track and it was interesting to read other peoples' perspectives.

19. Excellent course with detailed information regarding the incidence, prevalence and pathophysiology behind traumatic brain injuries.
20. Thank you to the Physioplus team for all your hard work in giving us this platform to gain knowledge and stay current in the ever-changing world of physio.
21. This course is very educational and informative and should be encouraged among physical therapists especially those with keen interest in neurology and neurological conditions.
22. The first part of this course - Introduction to Brain Injury has been delivered in a clear and concise way that has made learning easy and is full of information to support my clinical practice. The best learning experience I have found on TBI
23. Wonderful Course for all clinicians but especially for those in neuro-physiotherapy
24. TBI has never been made simpler to understand and grasp... excellent course!
25. This course was amazing for me, the videos were my favourite because I got to understand what was taking place at a cellular level. You also have an international community you can interact with and learn from.
26. An excellent review of anatomy, that rekindled an excitement for learning!
27. A great introduction to TBI that I would recommend to anyone who feels they are lacking formal or structured education in this topic.
28. Physioplus and Physiopedia will become the bible of physiotherapists soon!
29. Excellent course. An enormous amount of information that is very well organised and easily comprehensible. This course has enriched my knowledge of traumatic brain injury immensely.
30. As a student I'd say Physioplus has given me an exceptional opportunity to enhance my clinical thinking skills and gain extra experience in a whole different field of study... in the comfort of my own home!
31. The information provided during the introduction was very helpful and detailed. The quiz at the end of the course was well structured and it was easy to understand the questions asked
32. I thoroughly enjoyed refreshing my memory of neuro anatomy. Thanks Physioplus, you made it fun.
33. There is a wealth of good, reliable information here. Physiopedia and Physioplus are the FIRST places I access for information that is well presented, accessible and based on good clinical science.
34. I love Physioplus courses. The information provided is extensive and comprehensive. The international aspect adds more information and understanding outside of my small bubble in my country.
35. Physioplus is the best learning platform that connects the minds of physios all over the world. It's a great opportunity and pleasure to learn from and with the international physio family. Thank you so much Physioplus team for your generous support.
36. A thorough course which allows for beginner, intermediate and advanced learning.
37. Introduction to TBI is an excellent course that provides comprehensive material to review basic anatomy and physiology, as well as discuss the fundamentals of TBI patient care.

38. I have found this part of the course extremely useful. I have not had to think much about brain anatomy since I trained to become a physiotherapist many years ago. The challenge has been welcome!
39. This course was very well constructed and presented by the team at Physioplus...Good job! The course has been very informative and I encourage all medical professionals to undertake Physioplus courses.
40. Excellent course that is accessible to clinicians from varying backgrounds and levels of experience. Strongly recommended for anyone working with persons with TBI
41. If you are a physiotherapist and treat patients with traumatic brain injury, this course is a must as it will expose you to a wealth of evidence-based interventions.
42. Initially I thought the course would be an impossible challenge because I am not very experienced in the area of neuroscience. However the breakdown of the course was exemplary and I easily followed through the materials and enjoyed each step.
43. This a fantastic platform to improve our knowledge and clinical practice... Physioplus is like a family that gathers members from the whole world where everyone's opinion is respected and everyone has an equal chance to improve his/her skills.
44. Physioplus is a leader in evidence-based practices for physical rehabilitation. As a sports physician, they are a great source that I refer patients and colleagues to frequently. Routinely, they offer free courses but their paid membership would be a great way to learn about topics and conditions that walk into your practice. It also helps that their courses are CEU-accredited! Love this platform.
45. As a physiotherapy teacher this program helps me to understand TBI in a detailed manner. Also it allowed me to understand which points are worth emphasising. The videos included are good tools for teaching and learning. Overall a good learning experience.
46. A very good crash course in TBI, I would definitely suggest this to any health care professional
47. This course is very informative. It is reader friendly with associated photos and videos for better understanding. Absolutely an excellent course.
48. I highly recommend this course to any physios wanting to brush up on their knowledge and improve on their understanding of TBI

### ***3.2 Assessment of TBI testimonials***

1. Great course, a lot of good reading material and nice videos with people that work in the field of TBI daily who share their opinions, ideas and ways to work.
2. I have found Physioplus courses to be up-to-date and evidence-based while remaining digestible and accessible. The structured format works well with my busy work and family schedules. I can complete sections little by little and see my progress every time I return.
3. Physioplus is an awesome platform for both academics and clinicians to upgrade their professional knowledge without affecting their work schedule. The areas covered and the discussions made by the physios from different countries of the world provide a global approach towards each topic. Treatment of each condition varies due to local conditions



which helps the physios to filter their goals and approaches accordingly. I really appreciate the effort taken by the whole Physioplus team.

4. As expected the course is extremely and thoughtfully well organized and presented with lots of additional information.
5. This course really refreshed my brain on TBI, after about 2 years of not handling a TBI case.
6. This is an in depth, evidence based, clinical guideline on management of traumatic brain injury. Thank you, the best I have come across, so educational!
7. This course has added to my body of knowledge with regard to TBI. It has changed my approach with patients who have TBI and how I go about their rehab process.
8. This course was very helpful in helping me make changes to my practice including goal setting and outcome measures to improve patient care.
9. Witnessing the high-quality practices in other places is an excellent driver to improve our own. Excellent courses at your disposal at home is a dream for every professional with limited free time or training budget.
10. This is a very comprehensive course on TBI. It is a great learning experience.
11. This course is an excellent review and update of current knowledge and trends which is especially helpful for older clinicians to keep up to date and providing the best evidence based care for our patients.
12. Studying TBI with Physioplus has been a unique experience that will enlighten and impact my career forever.
13. This course is riveting for anyone with a keen interest in neuro-rehabilitation. It has changed my perspective for the better on the care of these types of patients. Outstanding!
14. As a Pre-Hospital Provider, I found this course extremely beneficial in understanding the long term management of TBI patient
15. Covered a broad range of physio assessment skills ranging from very acute to later in rehabilitation and a very interesting overview of disorders of consciousness and the role of physio in facilitating early mobilisation and the potential benefits of this.
16. This particular module had some familiar tools such as the ICF and certain Outcome Measures. However, throughout the course, I realized that there is a lot more that I can do with certain patients despite their LOC and outcome measures do play an important role in the assessment and keeping a more accurate track of patient progress.
17. This course is an excellent one. As a physiotherapist, I have learned a lot that I didn't get to learn in college about TBI. I highly recommend it for other physiotherapists.
18. Physioplus is the gate to the professional growth of Physios from all over the world. Thank you so much for connecting Physios from different countries.
19. This was an excellent course that provided a great deal of useful information. Perhaps the best part were the videos that explored each step of the Glasgow and Los amigos scales because they demonstrated exactly what responses to look for. The Los Amigos video showed real patients which provided great insight to the impairments and what therapeutic activities at each level look like.
20. The way the course is set up is great and it makes complex concepts very simple. Plus you get to interact with an international community and learn from each other.

21. This course has helped me understand a lot of things about TBI and I have learned the ICF and SMART goal setting which will aid in my treatment plans and outcomes.
22. This is a great way to refresh and be up to date with the latest research. Often we are unsure as therapists if we are doing the right thing especially the section that covered early mobilisation.
23. There is so much more to TBI then I appreciated. Patients with Disorders of Consciousness has been so interesting to learn about. This has been very helpful for my overall Neuro learning!

### ***3.3 Management of TBI testimonials***

1. I did this course because I have no experience in the management of patients with TBI and confirmed the similarities with neurological rehabilitation. Also the importance of MDT and discharge planning at the acute stage.
2. This is a superb course for any physiotherapist / medical professional who wants to expand their knowledge on the management of TBI patients. Your practice will never be the same after taking this course.
3. This was a fantastic learning experience. Many learning sources and many useful links. I have learned so much and this course opened a window to the subject of management of brain injuries. Thank you for an excellent course.
4. Management of traumatic brain injury has taught me the true meaning of individuality in treatment plans
5. It was a well organized and thought out course clearly emphasizing the important characteristics related to the assessment and care of patients with TBI. The videos included were especially excellent, as they demonstrated what therapy looks like throughout the different stages of TBI rehabilitation.
6. Great course, rich materials, up to date information. Presents a broad spectrum of methods, builds up a solid structure of interventions in texts, and videos, Reliable material, equally good for the beginners, and for those who want to refresh their knowledge in the topic.
7. Another brilliant Physioplus course - so so helpful and relevant
8. No matter what setting you work in, seeing the whole spectrum of TBI management from acute care to discharge and beyond will help you to better serve your patients (and their families) in attaining the maximum function possible. This course does just that.

### ***3.4 Specific interventions for TBI testimonials***

1. This course is excellent. I will always want to take the subsequent courses by Physioplus
2. The course is well organized and you get to work around your own schedule and at the end you gain so much knowledge that will change your patients lives.
3. The TBI course provided many great resources I will refer back to in my daily clinical practice.
4. The creators have clearly put in an incredible amount of time and effort to create such in-depth courses, and I am grateful for these accessible and worthwhile online courses,

especially the international connection they promote. Thank you so much for the courses and all you do for our profession and our patients.

5. What a fantastic course! It was informative and used such a range of mediums (text, diagrams, videos, interviews, articles) that it could suit all types of learners. As a result, I have changed outcome measures I use in clinical practice, learnt a lot about the use of tech in TBI Mx, and have established some connections with experts in this field. Thank you very much!!
6. This course has opened up my eyes to a more thorough explanation of Traumatic Brain Injuries and ways of not only identifying them but also learning the different aspects of treatment from the Acute Setting all the way to the Community Re-Integration.
7. This is a great course that I would recommend to any physical or occupational therapist looking to expand TBI basics for treatment, assessment, etc.
8. I was very pleasantly surprised by this course. The layout was very user-friendly and the content very interesting. I would recommend it to seasoned neuro-rehab therapists and fresh rookies alike.
9. MOOC's are a fantastic way of learning at your own pace in your own environment. Physiopedia providing, this TBI course facilitates all physios wherever they are to participate.
10. This course is magnificent and inspiring to any neurological physiotherapist who at times may have been feeling like they weren't doing enough for their clients. It has taught me a lot on how to better manage these types of patients in all stages in rehabilitation.
11. Fantastic course, easily accessible, confidence boosting!
12. Fantastic course to freshen your outlook and skills in TBI physiotherapy

## Appendix 4: Impact of clinical practice

1. Completing this final section of the TBI programme makes the improvement potential for my work more comprehensive.
2. I am really interested to incorporate what I have learned from this course to my practice as a PT, especially the new technology being introduced as part of the treatment.
3. It has provided me with a better background of knowledge to consider when TBI is part of a patient's clinical history. I would take this into account for programming etc.
4. This course has helped me a lot to look at some barriers that I face daily when treating patients with TBI patients
5. I'll implement fall prevention strategies and physical activities into planning treatment. I will improve the structure of other treatment approaches.
6. I think it could help me to tailor my approach to be more specific and effective when addressing certain issues (for example, muscles to strengthen for walking). Hearing about people's personal experiences with TBI help to foster empathy with the clinician.
7. I am more confident about applying these specific interventions clinically.
8. I will now increase the physical activity advice I give and my alter goal setting approach. management of TBI patients is easier now
9. I intend to take into practice a well rounded view of the management of a patient as a whole (cardiorespiratory, cognitive, behavioural, physical, etc).
10. I will definitely be more willing to work with people in the ICU with a TBI with the goal of addressing respiratory function, alertness, positioning, and balance.
11. I feel more confident about advocating for treatment for patients with TBI in my workplace
12. I will try to add these specific interventions for my future practice in patients with TBI. I have some misunderstandings before going through this course. Now it's all clear. Thank you.
13. This course reminded me to look at all factors that may be preventing the patient from reaching his or her goals
14. I will refer to more clinical guidelines to help guide my treatment approaches. I have several resources I can refer back to to guide my clinical practice.
15. Am now adequately equipped to handle T.B.I confidently and am quite certain that every contact will change someone's life
16. I am reminded of several factors I need to both assess and address in my practice - giving me a broader scope and focus
17. I intend to intensify the duration of my physiotherapy sessions with patients who have TBI and as well focus on respiratory rehabilitation especially in the acute phase. Knowing the impact it has it on the brain
18. I will shape my interventions according to the ICF.
19. The biggest change to my clinical practise will be that I now have specific guidelines for cardiovascular exercises to give, for my patients to prevent cardiovascular diseases.
20. I am putting more emphasis on motor and cognitive dual tasking, and will be paying more attention to patient interests in order to motivate them to comply with HEPs and to improve their life long fitness.

21. Improved outcome measure use; improved EBP when it comes to setting therapy and physical activity; increased awareness of the ICF Framework.
22. I think that this has helped me to understand better the importance of understanding how rehabilitation plans must be multi-modal as it is uncommon for patients to only have one issue following a TBI.
23. This course has widen my scope of understanding the specific management of TBI
24. I am more intentional about my interventions with TBI patients after this course
25. I have incorporated a falls prevention program to my clinic as well I intend to incorporate more outcome tools better suited to neurological patients
26. I have started implementing ICF goal setting with my MSK patients.
27. The last (4th) section of the course was my favorite by far because it discussed actual interventions in ways that I never thought of before.
28. Enhanced awareness of the wide variety of barriers that people may have that make it harder for them to exercise.
29. I am now aware of other treatment strategies (like robotics and virtual reality).
30. Better knowledge of importance of ICU physiotherapy treatment in acute phase of TBI
31. I have more ideas on how to manage client's with TBIs-especially in the area of physical activity prescription