

Table. Key information of the serious games assessed

First author-year	Name of the serious game, platform	Clinical topic	Theoretical framework for the design or the development process of the serious game	Planned frequency (# of session) and duration (# of minutes) of usage	Challenge
Adjedj-2017	Name non-reported, computer and tablets	Atrial fibrillation management	Not reported	A single 30-minute session	To correctly examine various patients and provide them with the correct treatment in a medical office.
Berger-2018	Name non-reported, platform non-reported	Pharmacist triage	Not reported	A single session, duration not reported	To perform an adequate pharmacist triage and to provide a correct intervention in response.
Boada-2015	Life Support Simulation Activities (LISSA), computer	Cardiopulmonary resuscitation	Not reported	Not reported	To save a character from sudden cardiac arrest by performing cardiopulmonary resuscitation.
Boeker-2013	Uro-Island, computer	Phase contrast microscopic urinalysis	Not reported	Not reported	To free a character from an island by formulating clear diagnosis regarding various urine pathologies.
Brull-2017	World of Salus, computer	Pain management, wound management, and fall prevention and management.	Not reported	Frequency not reported, two to four hours of usage	Not reported

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Buijs-Spangers-2019	Delirium Experience, computer	Delirium management	Not reported	Not reported	To provide inadequate management of a patient diagnosed with delirium
Buijs-Spangers-2018	Delirium Experience, computer	Delirium management	Not reported	A single 20-minute session	To take proper care of a patient diagnosed with delirium
Chien-2013	Name non-reported, computer	Bimanual carrying and peg transfer	Not reported	A single 40-minute session	Not reported
Chee-2019	Play-learn inhalation game, computer and iOS	Administration of inhaled medication	Technology, pedagogy, and content knowledge framework	A single 10-minute session	To answer the most questions and to match the most pictures correctly.
Cook-2012	PULSE, computer, PlayStation Portable	Cardiopulmonary resuscitation	Not reported	Unlimited access for two weeks	To solve various clinical scenarios by using clinical equipment.
Courtier-2016	Tic-tac-toe, computer	Imaging study	Not reported	A single one-hour session	To form a tic-tac-toe before the other competing team by answering questions correctly.

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Dankbaar-2016	abcdeSIM, computer	Acutely-ill patients (e.g., bleeding)	Not reported	Frequency not reported, two to four hours of usage	To stabilize within 15 minutes patients presenting to an emergency department.
Dankbaar-2017	Air Medic Sky-1, computer	Patient safety awareness and personal stress management	Not reported	Frequency not reported, three to four hours of usage	To watch videos, to perform breathing exercises, and to diagnose and treat patients in a virtual flying hospital over the globe.
Del Blanco-2017	Operating Theater Game, computer	Functioning of an operating theater	Not reported	Not reported. However, participants had access to the game for a day.	Not reported
de Sena-2019	Name non-reported, iOS	Cardiopulmonary resuscitation	Not reported	A single 20-minute session	To identify a victim of cardiac arrest and to perform cardiopulmonary resuscitation.
Diehl-2017	InsuOnline, computer	Diabetes management	Adult- and problem-based learning	Frequency not reported, four hours of usage	To improve blood sugar management in patients diagnosed with diabetes

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Drummond-2017	<i>Staying Alive</i> , computer, electronic tablet	Sudden cardiac arrest	Not reported	Two sessions, 12 minutes of usage	To save a character from sudden cardiac arrest by performing cardiopulmonary resuscitation
Foss-2014	The Medication Game, computer	Basic mathematical concepts in medication calculation	Multiple intelligence theory	Not reported	To perform various mathematical calculations
Gauthier-2015	Vascular Invaders, computer	Human vascular anatomy	Evidence-centered design framework	Not reported. However, 35 days of free use.	To travel in a nanobot through various vascular vessels to destroy invaders.
Graafland-2017	Dr. Game, Surgeon Trouble, iOS and Android platforms	Equipment problems of the laparoscopic tower	Non-reported	Two 30-minute sessions	To align three similar titles (in a title-matching design) while solving laparoscopic equipment-related issues.
Hannig-2013	Skills-O-Mat, computer	Alginate mixing in dentistry	Peyton's method	Not reported	To mix alginate at the correct speed.
Harrington-2018	Underground, Nintendo WiiU	Laparoscopic technical skills	Not reported	Frequency not reported, 20 hours of usage	To build paths by moving objects in a maze.

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Haubruck-2019	Touch Surgery, iOS	Chest tube insertion	Not reported	A single 120-minute session	To answer the most questions correctly.
Katz-2017	Orthotopic liver transplant Trainer, iOS and Android platforms	Management of orthotopic liver transplant	Not reported	At least once per week for a month, duration of usage non-reported	To properly assess and manage a patient during the peri- and the per-operative periods to gain credits.
Kerfoot-2012	Name non-reported, computer (through e-mails)	Urology clinical practice guidelines	Spaced education	Two to four questions sent per e-mail every two to four days for 34 weeks	To answer the most questions correctly.
Kerfoot-2014	Name non-reported, computer (through e-mails)	Hypertension management	Salen and Zimmerman game design fundamentals Spaced education	One to two questions sent every three days for 52 weeks	To answer the most questions correctly.
Knight-2010	Triage trainer, computer	Basic incident triage sieve skills	Not reported	A single 60-minute session	As a first-respondent at a major incident scene, to assign the right priority to each casualty.

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Lagro-2014	GeriatricX, computer	Geriatric medical decision-making and cost consciousness	Not reported	Frequency not reported; 60 to 90 minutes of usage	To provide proper assessment and management to elderly patients.
Li-2015	3D CPR game, platform non-reported	Cardiopulmonary resuscitation	Not reported	Not reported	To save a character from sudden cardiac arrest by performing cardiopulmonary resuscitation.
Mohan-2018	Shift: The Next Generation, iOS	Trauma triage	Unspecified behavioral learning theories	Frequency not reported, two hours of usage	To triage a prespecified number of patients in the emergency department under time pressure.
Mohan-2017, 2018	Night Shift, electronic tablet	Trauma triage	Narrative engagement and unspecified behavioral learning theories	Mohan, 2017: A single one-hour session Mohan-2018: Frequency not reported, two hours of usage	To provide proper assessment and management to patients with severe injuries in the emergency department while solving an in-game mystery.

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Polivka-2018	HH-VSTS, computer	Health and safety hazards	Not reported	Not reported	To identify potential health and safety hazards in a home.
Rondon-2013	Anatesse 2.0, computer	Anatomy and physiology of the speech, language, hearing, and swallowing mechanisms	Not reported	Nine sessions (once per week), duration of usage not reported	To answer the most questions correctly.
Scales-2016	Name non-reported, computer (through e-mails)	Quality improvement and patient safety	Content retrieval	Two questions twice a week	To answer the most questions correctly.
Sward-2008	Name non-reported, computer	Pediatric	Not reported	Four one-hour sessions	To answer the most questions correctly to progress through an electronic game board.
Tan-2017	Name non-reported, computer	Blood transfusion	Experiential gaming model ⁶	A single 30-minute session	Various challenges related to blood transfusion (e.g., choosing the correct material, checking if the blood product is right)

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Van Nuland-2014	Online Competitive Anatomy Tournament, computer	Functional anatomy	Not reported	A single 20-minute session	To answer the most questions correctly.