Key Elements to Report for Simulation-Based Research

Modified after Cheng A, Kessler D, Mackinnon R, Chang TP, Nadkarni VM, Hunt EA, et al. Reporting guidelines for health care simulation research: extensions to the CONSORT and STROBE statements. Adv Simul (Lond). 2016 Jul 25:1:25. doi: 10.1186/s41077-016-0025-y

Elements	Subelements	Descriptor	Checklist
Participant orientation	Orientation to the simulator	Describe how participants were oriented to the simulator (e.g., method, content, duration).	X (page 7)
	Orientation to the environment	Describe how participants were oriented to the environment (e.g., method, content, duration).	X (page 7)
Simulator type	Simulator make and model	Describe the simulator make and model.	X (page 6)
	Simulator functionality	Describe functionality and/or technical specifications that are relevant to the research question. Describe modifications, if any. Describe limitations of the simulator.	X (page 6)
Simulation environment	Location	Describe where the simulation was conducted (e.g., in situ clinical environment, simulation center, etc.).	X (page 5)
	Equipment	Describe the nature of the equipment available (e.g., type, amount, location, size, etc.).	X (page 6)
	External stimuli	Describe any external stimuli (e.g., background noise).	N/A
Simulation event/scenario	Event description	Describe if the event was programmed and/or scripted (e.g., orientation to event, scenario progression, triggers). If a scenario was used, the scenario script should be provided as an appendix.	N/A
	Learning objectives	List the learning objectives and describe how they were incorporated into the event.	N/A

Elements	Subelements	Descriptor	Checklist
	Group vs. individual practice	Describe if the simulation was conducted in groups or as individuals.	X (page 7)
	Use of adjuncts	Describe if adjuncts (e.g., moulage, media, props) were used.	N/A
	Facilitator/operator characteristics	Describe experience (e.g., clinical, educational), training (e.g., fellowship, courses), profession.	X (page 7)
	Pilot testing	Describe if pilot testing was conducted (e.g., number, duration, frequency).	N/A
	Actors/confederates/ standardized/simulated patients	Describe experience (e.g., clinical, educational), training (e.g., fellowship, courses), profession, sex. Describe various roles, including training, scripting, orientation, and compliance with roles.	N/A
Instructional design (for educational interventions) or exposure (for simulation as investigative methodology)	Duration	Describe the duration of the educational intervention. If the intervention involves more than one segment, describe the duration of each segment.	N/A
	Timing	Describe the timing of the educational intervention relative to the time when assessment/data collection occurs (e.g., just-in-time training).	N/A
	Frequency/repetitions	Describe how many repetitions were permitted and/or the frequency of training (e.g., deliberate practice).	N/A
	Clinical variation	Describe the variation in clinical context (e.g., multiple different patient scenarios).	N/A
	Standards/assessment	Describe predefined standards for participant performance (e.g., mastery learning) and how these standards were established.	N/A

Elements	Subelements	Descriptor	Checklist
	Adaptability of intervention	Describe how the training was responsive to individual learner needs (e.g., individualized learning).	N/A
	Range of difficulty	Describe the variation in difficulty or complexity of the task.	N/A
	Nonsimulation interventions and adjuncts	Describe all other nonsimulation interventions (e.g., lecture, small group discussion) or educational adjuncts (e.g., educational video), how they were used, and when they were used relative to the simulation intervention.	N/A
	Integration	Describe how the intervention was integrated into curriculum.	N/A
Feedback and/or debriefing	Source	Describe the source of feedback (e.g., computer, simulator, facilitator).	N/A
	Duration	Describe the amount of time spent.	X (page 9)
	Facilitator presence	Describe if a facilitator was present (yes/no), and if so, how many facilitators.	X (page 7)
	Facilitator characteristics	Describe experience (e.g., clinical, educational), training (e.g., fellowship, courses), profession, sex.	X (page 7)
	Content	Describe content (e.g., teamwork, clinical, technical skills, and/or inclusion of quantitative data, etc.).	N/A
	Structure/method	Describe the method of debriefing/feedback and debriefing framework used (ie, phases).	N/A
	Timing	Describe when the feedback and/or debriefing was conducted relative to the simulation event (e.g., terminal vs. concurrent).	N/A

Elements	Subelements	Descriptor	Checklist
	Video	Describe if video was used (yes/no) and how it was used.	N/A
	Scripting	Describe if a script was used (yes/no) and provide script details as an appendix.	N/A