

Introduction

The minimum care package required during pregnancy and childbirth in order to manage potentially life threatening complications is referred to as emergency obstetric care (EmOC) (World Health Organization (WHO), 2009). This care package addresses the main causes of maternal death, stillbirth and early neonatal death.

Basic EmOC services	Comprehensive EmOC services
1. IV/IM antibiotics	All included in basic EmOC (1-7) plus:
2. IV/IM oxytocic drugs	8. Caesarean section
3. IV/IM anticonvulsants	9. Blood transfusion
4. Manual removal of placenta	
5. Removal of retained products of conception (e.g. by manual vacuum aspiration)	
6. Assisted vaginal delivery (e.g. ventouse delivery)	
7. Resuscitation of the newborn baby using a bag and mask	

Source: WHO 2009: Managing emergency obstetric care: a handbook

Signal functions involved in EmOC

Building upon the review by Ameh et al (2019) we conducted a systematic review of studies, which aims to evaluate the effectiveness of education and training in EmOC in Southeast Asia (SEA).



Countries of SEA included in this review (World Atlas, 2022)

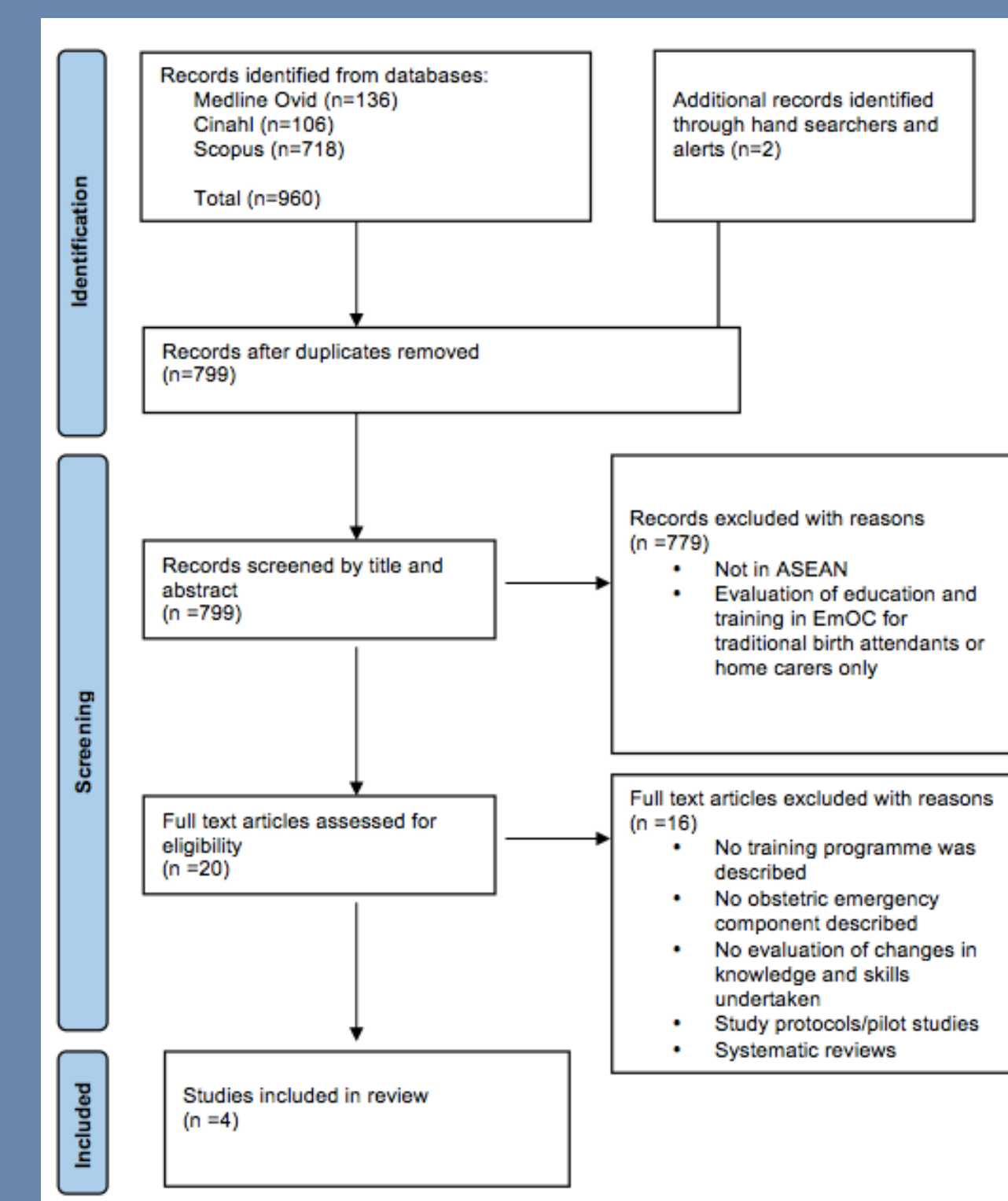
The eligibility criteria was developed using the Cochrane PICOS framework (Thomas et al, 2022)

PICOS	Description
Population	All categories of Healthcare workers (HCWs) and/or students in SEA
Interventions	EmOC education and training
Comparisons	Alternative or different interventions or the absence of interventions
Outcomes	Primary: change in Knowledge (K) and/or skills (S); Secondary: to assess Attitudes (A) (feelings, emotions, beliefs and values)
Study design	Experimental and quasi experimental

Methods

- Conducted for the period 2018 to 2021 (inclusive)
- Databases searched: (on 6th December 2021) CINAHL, MEDLINE, Proquest Dissertations & Theses and Scopus
- The grey literature and reference lists of included studies were searched
- Duplicates were excluded and records were screened independently by two researchers
- We utilised the knowledge, skills and attitude framework (Anderson et al, 2001)

PRISMA flowchart of study selection (Page et al, 2021)



Characteristics of included studies

Study	Origin	Sample	EmOC topics	Intervention	Study design/evaluation approach
Cagayan et al 2021	Philippines	40 HCWs	Hypertension/PPH/ pre-term labour/essential intrapartum and newborn care (EINC). *1	2 day training workshop: series of lectures and demonstrations	-K: pre-post test (MCQs) -S: OSCE (day 2)
Ulfa et al 2021	Indonesia	115 midwifery students	PPH	Control (didactic) vs. experimental (team based learning (TBL) – iRAT and tRAT)	-K: pre-post test (MCQs), 4 time points (post-test: immediately, 2, 6 and 12 weeks) -A: Nursing Student Satisfaction Scale
Yee et al 2021	Malaysia	115 medical students	PPH/sepsis/maternal collapse/eclampsia	Mini lectures and simulated team based approach	-K: pre-post test (SBAs) -A: validated questionnaire
Yeo et al 2020	Singapore	162 HCWs	Neonatal resuscitation	Web based simulation game	-K: MCQs, 2 time points (completion of training and at 6 months) -S: manikin

*1 Workshop included 7 topics not included in WHO signal functions

Findings

Change in Knowledge, Skills and Attitude

Cagayan et al 2021	A two-day workshop delivering a series of lectures and demonstrations resulted in a statistically significant improvement in knowledge (p<0.01).
Ulfa et al 2021	PPH knowledge scores and student satisfaction scores were higher in the TBL learning group versus the control group. This was statistically significant (p<0.01).
Yee et al 2021	A combination of simulation and TBL produced a statistically significant improvement on knowledge scores (p<0.01). 66-77% of students strongly agreed the training was effective for them.
Yeo et al 2020	A web-based game in neonatal resuscitation was not effective in achieving retention of knowledge and skills up to 6 months (p=0.359 and p=0.016, respectively). However, <50% of participants in the intervention group engaged with the game, skewing the results.

Implications for clinical practice:

- Training needs to be contextually tailored but also based on evidence
- There is a need for 'booster training' at regular intervals

Implications for research:

- Research is required to fully understand the impact of the Covid 19 pandemic on delivery of EmOC education and training in SEA

Quality assessment:

- Studies were appraised using standardized critical appraisal tools from JBI (Tufanaru et al, 2020)
- Studies were deemed of good quality

Conclusion

This review builds up existing evidence, focusing on the effectiveness of EmOC education and training in SEA

Both simulation based training and TBL is effective in improving knowledge, skills and attitude

Effective EmOC packages are a key component in providing competent HCWs. This is paramount in ensuring all countries within SEA achieve the SDG targets



References

- Anderson, L.W. & Krathwohl, D.R. (Eds.) (2001). A taxonomy for Learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. New York: Addison Wesley Longman.
- Cagayan, M.S.F.S., Ang-Bon, R.M., Garcia, Jr.F.B., San Juan, F.S., Llave, C.L., Banwell, C., Llamas-Clarke, E.F. (2021) The effect of a two-day training and refresher program on the basic emergency obstetric and newborn care knowledge and skills of health workers in Legazpi City, Albay, Acta Medica Philippina, DOI:10.47895/amp.vi0.3151 [Accessed 6 December 2021].
- Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E., Chou, R., Glanville, J., Grimshaw, J.M., Hróbjartsson, A., Lali, M.M., Li, T., Loder, E.W., Mayo-Wilson, E., McDonald, S., McGuinness, L.A., Stewart, A.C., Thomas, J., Tricco, A.C., Welch, V.A., Whiting, P. and Moher, D. (2021) The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. Journal of Clinical Epidemiology, 134, 178-189.
- Thomas, J., Kneale, D., McKenzie, J.E., Brennan, S.E. and Bhaumik, S. (2022) Chapter 2: Determining the scope of the review and the questions it will address. Cochrane Handbook for Systematic Reviews of Interventions version 6.3 (updated February 2022). Cochrane, 2022. Available at: www.training.cochrane.org/handbook [Accessed 6 May 2022].
- Tufanaru, C., Munn, C., Aromataris, E., Campbell, J., and Hopp, L. (2020) Chapter 3: Systematic reviews of effectiveness. JBI Manual for Evidence Synthesis. JBI, 2020. Available at: https://synthesismanual.jbi.global. https://doi.org/10.46658/JBIMES-20-04 [Accessed 6 May 2022].
- Ulfa, Y., Igarashi, Y., Takahata, K., Shishido, E. and Horuchi, S. (2021) Effectiveness of team-based learning on postpartum hemorrhage in midwifery students in Indonesia: a quasi-experimental study. Nurse Education Today, 105, 105015.
- WHO (2009) Monitoring obstetric care: a handbook. Geneva: WHO.
- World Atlas (2022) Southeast Asian Countries. Available at: https://www.worldatlas.com/articles/which-countries-are-considered-to-be-southeast-asia.html [Accessed 5 May 2022].
- Yee, M.M., Yi, M.S., Nyunt, M.K., Veasualingam, B., Sint, S.Y., Karali, H. and Kurein, A. (2021) Effectiveness of obstetric emergency workshop in medical students in Newcastle University Malaysia. Research Journal of Pharmacy and Technology, 14(9), doi: 10.52711/0974-360X.2021.00826.
- Yeo, C.L., Ho, S.K.Y., Tagamolilla, V.C., Arunachalam, S., Bharadwaj, S.S., Poon, W.B., Tan, M.G., Edison, P.E., Yip, W.Y., Haium, A.A.A., Jayagobi, P.A., Vora, S.J., Khurana, S.K., Allen, J.C. and Lustestica, E.I. (2020) Use of web-based game in neonatal resuscitation - is it effective? BMC Med Educ. 20(1), doi: 10.1186/s12909-020-02078-5.

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