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# Development, implementation, and evaluation of neonatal thermoregulation decision support web application

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## Abstract

**Objectives** Thermoregulation is important for all age groups, and in neonates, it is considered a crucial event to adapt to extrauterine life. Therefore, using systems that provide frequent reminders in different ways in the field of thermoregulation can help thermal stability in neonates. The present study aimed to develop, implement, and evaluate a neonatal thermoregulation decision support system (DSS) as a web application.

**Methods** The present research was a multi-method study because it included the three phases of development, implementation, and evaluation of the neonatal thermoregulation decision support web application. In the system designing phase, the waterfall model is used. The second and third phases of the study, implementation, and evaluation, were conducted as a quasi-experimental study.

**Results** The results of this study were presented in two parts: the developed web application, and the results of the evaluation of the web application. The results of the statistical tests revealed that the use of the web application had a positive and significant effect on both the adjustment of the temperature of the incubator (maintaining the neutral temperature) and the maintenance of the temperature of the neonate's body ( $p=0.000$ ).

**Conclusions** These results indicate that a nurse's sensitization and guidance with a neonatal thermoregulation decision support system can help to effectively neonate thermoregulation and the nurse has brought the temperature care close to the standard care based on the conditions of each neonate.

**Keywords** Thermoregulation, Neonates, Decision support system, Electronic temperature recording

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