

Nursing student knowledge and compliance with SIDS prevention strategies

Excessive preventable sleep-related deaths require that every nurse encounter with infant caregivers should include safe sleep education and role modelling. Adequate training on sudden infant death syndrome (SIDS) prevention, including safe infant sleep, may be lacking in some nursing schools. The purpose of this study was to assess SIDS prevention knowledge and compliance among nursing students. Many students did not accurately identify modifiable SIDS risk factors, ethnic groups with higher SIDS incidence, or optimal education methods. These findings could be helpful for assuring that nursing curricula adequately prepare new nurses for preventing future SIDS events.

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Key points

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1. SIDS and SUDI are a leading cause of infant death in Mississippi, USA.
2. Adequate training on SIDS prevention and safe infant sleep may be lacking in Mississippi nursing schools.
3. A survey assessed general SIDS knowledge, risk reduction, and parental education strategies among nursing students.
4. Results indicate a need for further content on SIDS prevention.

Over the last 25 years, the global infant mortality rate decreased from 65 to 32 deaths per 1,000 live births.¹ However, infant mortality remains a relevant issue in both industrialised and underdeveloped countries.¹ Sudden unexpected death in infancy (SUDI, also known as SUID - sudden unexpected infant death) and sudden infant death syndrome (SIDS) remain a leading cause of infant death in Mississippi (MS), USA.² Historically, MS experiences the highest infant mortality rate in the USA, at 8.6 infant deaths per 1,000 births in 2016.³ SUDI is the second leading cause of MS infant deaths.²

Note, the term SUDI encompasses all unexpected infant deaths, both explained and unexplained. SIDS is a subgroup of SUDI and refers to the sudden and unexpected death of an infant that remains unexplained after a thorough investigation and post mortem examination.

Background

Being the most common cause of death among infants aged one to 12 months, SIDS occurs among otherwise healthy infants in conjunction with sleep and with no apparent signs of suffering.⁴ Although not wholly preventable, there are many strategies to reduce SUDI or SIDS risk factors. Some common risk factors include:⁴

- the prone sleeping position

- soft bedding
- bed-sharing
- overheating
- secondhand smoke exposure
- young maternal age.

Except for maternal age, all of the listed risk factors can be eliminated, thus minimising risk.⁵ The United States Department of Health and Human Services (USDHHS) recommends infants be placed on their backs on firm sleep surfaces with no excess bedding or toys in the crib.⁴ Caregivers should avoid bed-sharing. The infant's crib should be near caregivers in a smoke-free environment with a comfortable temperature.⁴

Best practice guidelines

The American Academy of Pediatrics (AAP) first provided guidance on sleep positioning and frequent risk factors, emphasising the nursing role in SIDS prevention in 1992.⁶ In 1995, USDHHS launched the Back to Sleep campaign.⁴ The updated AAP guidelines continue to emphasise the nurse's role in parental SIDS education and encourage nurses to always participate in prevention efforts and training.⁶

Scope of the problem

To quantify infant deaths with known unsafe sleep factors, Graham and Geary reviewed infant death certificates and

coroner records from MS in 2013.⁷ Among 373 infant deaths, 47 cases documented risk factors including co-sleeping (64%), positional asphyxia (15%), and other risk factors (21%). Preventing these 47 deaths could have reduced the MS infant mortality rate by 12.6%. As nurses play a significant role in educating new parents and caregivers about SIDS risk factors and prevention strategies, Graham and Geary suggested that the excessive preventable, unsafe sleep-related deaths require that every nurse encounter with infant caregivers includes safe sleep education and role modelling.

It is critical for nurses to be knowledgeable of SIDS prevention strategies to be effective patient educators and role models of appropriate infant care behaviours. However, without an academic foundation in SIDS prevention and risk factors, new nurses may be ill-prepared to fill this role. Many nursing schools across the USA remain lacking in SIDS education despite decades of government and health professional emphasis on safe sleep practices for infants.^{4,6} Incorporating safe sleep concepts into the nursing curriculum would be optimal timing to establish earlier role modelling behaviours among new nurses. Documenting student knowledge deficits related to SIDS prevention strategies is a first step in identifying needed curricular changes. The purpose of this study was to assess SIDS prevention knowledge and compliance among nursing students who had completed the childbearing family content within the University of Southern MS (USM) Bachelor of Science in Nursing (BSN) programme.

A review of the literature

SIDS prevention among caregivers

The US National Infant Sleep Position Study (1993-2000) supported the importance of verbal education by finding that healthcare workers' suggestions can greatly influence the choices and methods parents put into practice.⁴ Parents are more likely to use the supine sleeping position if recommended by a healthcare professional.⁴ The use of best practice is even greater among parents who witness nurses' proper prevention techniques in conjunction with verbal education.⁸ Safe sleep knowledge and compliance rates are significantly higher after parents are provided with written educational materials and attend a class before discharge.⁹

To combat nursing non-compliance regarding safe sleep, Bartlow et al noted the influence of nurses on parental practice after nurses learned more about SIDS prevention.¹⁰ Nurses were encouraged to integrate SIDS prevention knowledge into practice and education plans; not only did nursing adherence increase after a SIDS educational seminar, but also the parental use of the supine position increased from 42% to 75%. The first 24-48 hours after birth is the critical period for parents to learn these techniques by watching nurses consistently model SIDS risk reduction behaviours.¹⁰ USDHHS found that after just a 30-minute training programme, the rates of nurse modelling and correct parental education increased by >40%.⁴

SIDS prevention among practising nurses

Despite the importance of role modelling, many nurses do not adhere to SIDS prevention guidelines in the hospital setting. Although nurses may know safe sleep guidelines, not all agree with or practise them. In a California study, only 34% of nursing staff consistently instructed new mothers to place infants on their backs to sleep.¹¹ Such poor compliance diminishes the nursing role in educating parents on SIDS prevention.

In their study, Bullock et al found that 96% of their nursing cohort were aware of the AAP guidelines but 45% continued to disagree with the guidelines, citing fear of aspiration with the supine sleep position.¹¹ The supine aspiration fear, combined with the AAP discouraging prone positioning led to 75% of nurses resorting to the side-lying position. Many nurses had conflicting attitudes about SIDS and sleep positions, with only 49% believing sleep positions were related to infant deaths.¹¹

In addition to nursing behaviour and practice in the healthcare setting, the quality and accuracy of SIDS education provided by nurses may be concerning. Aris et al evaluated parental discharge teaching among 252 NICU nurses, finding many inconsistencies and inaccuracies in the information taught.¹² Only 52% of the 252 nurses taught parents to use supine sleeping when positioning their child, with 38% of those saying that the side-lying position was also a safe option. In addition, none of the surveyed nurses discussed other common SIDS risk factors such as bed sharing, overheating, and secondhand smoke exposure. Accurate messages are important, recognising that incorrect or

incomplete information can do more harm than good. Lack of SIDS knowledge prevention strategies, non-compliance, and weak or inaccurate education are themes frequently identified.¹¹⁻¹⁵

SIDS prevention among student nurses

A lack of SIDS education within nursing school curricula may at least partially explain discrepancies in nursing adherence to safe sleep practices in the healthcare setting. Huffman et al surveyed fourth-year nursing students in Midwest USA; while most students knew the SIDS definition, only 69% were aware of prevention strategies.¹⁶ This increased to 92% after an educational seminar. While students scored well on questions regarding sleep position, knowledge in other areas of SIDS prevention was lacking. Students most accurately recognised risk factors such as prone sleeping position and soft bedding but significantly fewer students could identify overheating, cigarette exposure and no breastfeeding as risk factors.¹⁶

In a study among over 300 nursing schools across the USA, Lerner et al found that, while 92% of the schools included SIDS education in curricula, less than half incorporated risk reduction and prevention strategies for SIDS.¹⁷ The most prevalent barriers to SIDS education were cited as lack of time and space for content, educational materials, and clinical exposure.¹⁷

While many studies addressed the importance of nursing education efforts and nursing knowledge and adherence to SIDS prevention, a literature search revealed only a single study evaluating nursing student knowledge of SIDS risk reduction strategies.¹⁶ Limited research on the topic confirms the need to further assess the level of SIDS risk reduction knowledge among nursing students.

Study design and methods

An online survey was administered to nursing students to assess general knowledge of SIDS, risk reduction strategies, and how to effectively communicate recommendations to parents. The research team consisted of a senior nursing student and faculty mentor. The sampling plan included fourth and fifth-semester nursing students enrolled in the USM BSN programme. Sample recruitment strategies included distributing the survey to students through email and social media posts. Requests were sent to professors to

allow in-class survey distributions.

Students unable to access the electronic survey received hard copy surveys.

A 16-question survey evaluated baseline SIDS knowledge, risk reduction strategies, and parental education methods. The initial six questions captured demographic information, including age group, self-identified race, student status, and familial status. The remaining ten items were extracted from the online educational programme for infant caregivers, accredited by the American Nurses Credentialing Center's Commission on Accreditation.⁴

The data were analysed with Qualtrics survey software's automated analytics to calculate simple frequencies or percentages of correctly answered survey questions.

Results

Demographics

The final analysis did not include incomplete surveys. The study sample included 56 survey participants, representing nearly 40% of the total eligible nursing students (n=144). Most participants were female (n=53), between 20 and 29 years of age (n=50), residing in MS (n=46), who self-identified as white or Caucasian (82%). Ten students self-identified as black or African American, and ten students reported permanent residence outside of MS. Out of 56 participants only one reported being a parent. More fifth-semester nursing students (n=39) than fourth-semester students (n=17) participated in the survey.

SIDS prevention knowledge and compliance

While most participants were aware that SIDS was a leading cause of infant deaths (91%) and could correctly identify a safe infant sleep environment (91%), a knowledge deficit was apparent on other SIDS prevention topics. Nearly half (42%) of students were unable to accurately identify major modifiable risk factors, with only 32 students identifying tummy time as a safe practice (FIGURE 1). Some respondents (17%) could not differentiate between correct and incorrect SIDS risk reduction recommendations (FIGURE 2). Several students (n=14) lacked knowledge of ethnic groups that have disproportionately higher SIDS rates. Finally, 17% of students were unaware of optimal methods for educating caregivers about SIDS and the need for clear and simple messages.

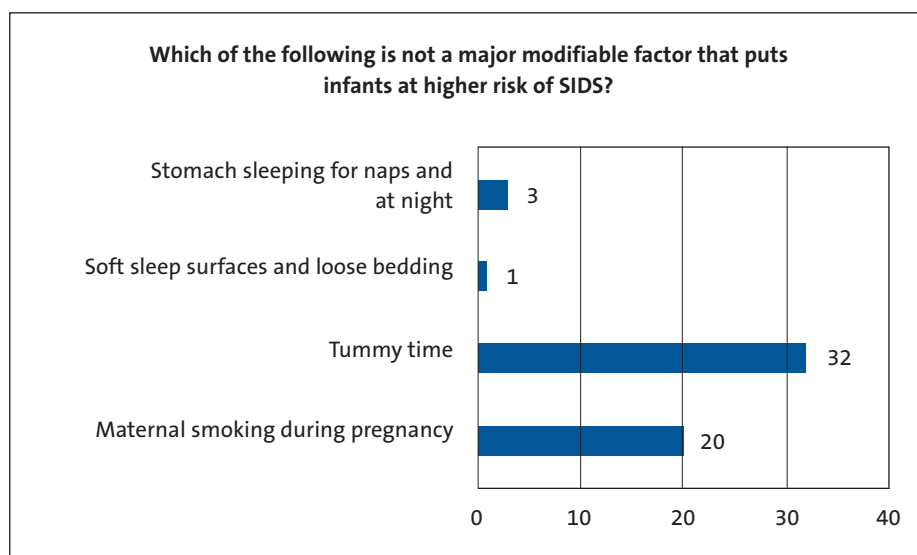


FIGURE 1 Results of the survey question on modifiable risk factors.

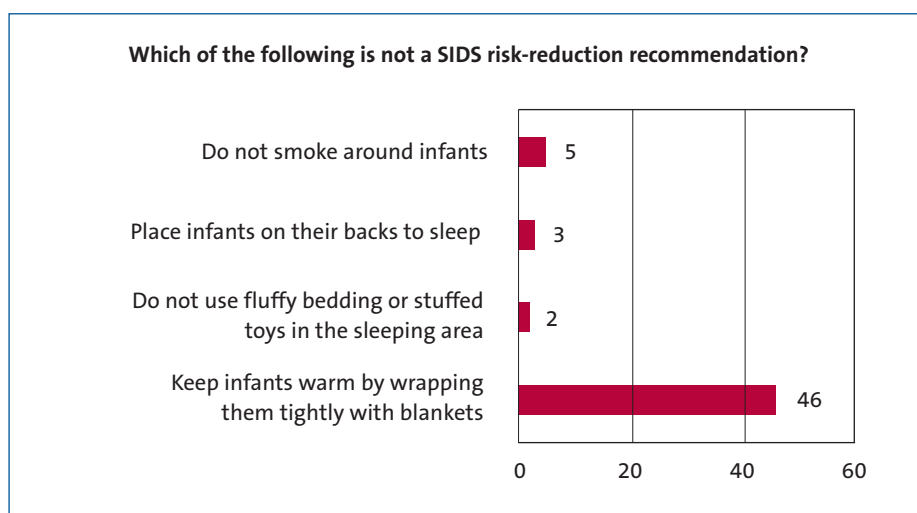


FIGURE 2 Results of the survey question on risk reduction recommendations.

Discussion

In 2016, MS recorded 61 sudden unexpected infant deaths, with unsafe sleep practices and SIDS contributing to most of the deaths.² While the infant death rate decreased by 6.5% from 2015, MS still retains the highest infant mortality rate in the USA.² The results of this study are important in that nurses play a significant role in preventing SIDS. Unfortunately, nursing students may be ill-prepared to fill this role.

The study results revealed an overall SIDS knowledge among senior nursing students and awareness of the infant health implications. Unfortunately, the same students demonstrated a knowledge deficit of more specific risk factors and prevention strategies. Several students were unable to distinguish between modifiable SIDS risk factors, recognise ethnic groups at higher risk for SIDS events, or identify

optimal teaching strategies for educating new parents about preventing SIDS.

Overall, the results indicate additional education on some survey topics is needed.

Recognising families at highest risk and effectively educating parents on modifiable risk factors is critical to reducing MS's high rates of sleep-related deaths. To successfully prevent SIDS in practice, a nurse must have the knowledge to educate parents on factors that increase SIDS risks. Also, the nurse must be able to identify populations most at risk for SIDS and make extra efforts to provide them with resources and education. Nurses must know the best, and most culturally appropriate, ways to communicate preventive education.

The USM nursing programme covers SIDS and safe sleep content during the third and fourth semesters. Both fourth and fifth-semester nursing students had recently been exposed to this content,

suggesting SIDS education would have been prominent in their memory. Two possible explanations might account for their lack of SIDS prevention knowledge. Either the material was not adequately covered, or students placed a low value on the material. One strategy to increase students' interest and retention of the subject matter might be to emphasise the link between unsafe infant sleep and MS's excessive infant death rates.

If inadequate education was indeed the reason for incorrect survey responses, the lapse in education might be explained by the lack of resources to educate students about SIDS. With so much to cover in the nursing curriculum other topics could easily be prioritised over SIDS. However, the survey questions utilised in this study were extracted from a free and easily accessible resource offered by the USDHHS – a nursing-specific SIDS education course that provides a comprehensive and straightforward SIDS overview and is available in the UK (www1.nichd.nih.gov/cbt/sids/nursecourse/progresstracking/requestprogresstracking.aspx).⁴

Limitations

Study limitations included less than 100% participation from students; only 56 (38%) of the eligible 144 students took the survey. Further, a disproportionate number of fifth-semester (n=39) to fourth-semester (n=17) students completed the survey, possibly explained by the student researcher being a fifth-semester student and more familiar to her classmates.

Finally, we only surveyed students at one MS nursing school, making it unclear if the SIDS knowledge deficit is specific to USM students, or prevalent across other nursing programmes.

Conclusions

Nurses have a significant role in preventing SIDS-related deaths but this study revealed a need for further content on SIDS prevention. It was unclear if lack of knowledge stemmed from inadequate education, students' failure to retain the information, or students placing a low value on SIDS information. Further study is needed to determine if lack of SIDS knowledge is a broader problem encompassing other nursing schools.

SUDI and SIDS remain major public health problems for MS and these excessive infant death rates demand that nursing students are well prepared as parental educators and clinical role models for preventing infant sleep-related deaths. Nurses should:

- recognise the urgency in conveying safe sleep information to new parents
- be able to identify the highest risk populations and respond with effective, culturally appropriate preventive education
- take advantage of free nursing educational resources that could help fill any education gaps.

References

1. **World Health Organization.** Infant mortality: situation and trends. Retrieved February 14 2017. Online at: www.who.int/gho/child_health/mortality/neonatal_infant_text/en/
2. **Mississippi State Department of Health.** Infant Mortality Report, 2017. Online at: https://msdh.ms.gov/msdhsite/_static/resources/7501.pdf
3. **Centers for Disease Control and Prevention.** Infant mortality rates by states. 2018 Online at: www.cdc.gov/nchs/pressroom/sosmap/infant_mortality_rates/infant_mortality.htm
4. **US Department of Health and Human Services.** Continuing education activity on risk reduction for sudden infant death syndrome (SIDS) and other sleep-related causes of infant death: curriculum for nurses. 2006 Online at: www.nichd.nih.gov/cbt/sids/nursecourse/Welcome.aspx
5. **Graham JC.** Little things count: SUIDI Overview. [PowerPoint Presentation: Medical Examiner Training Course, Jackson MS, 2014].
6. **American Academy of Pediatrics.** SIDS and other sleep-related infant deaths: updated 2016 recommendations for a safe infant sleeping environment. *Pediatrics* 2016;138:e20162938.
7. **Graham J, Geary S.** Quantifying Mississippi infant deaths with documented unsafe sleep risk factors. [Poster Presentation: Epidemiology Conference of the Americas, Miami FL, 2016].
8. **Esposito L, Hegyi T, Ostfeld B.** Educating parents about the risk factors of sudden infant death syndrome: the role of neonatal intensive care unit and well-baby nursery nurses. *J Perinat Neonatal Nurs* 2007;21:158-64.
9. **Dufer H, Godfrey K.** Integration of safe sleep and sudden infant death syndrome (SIDS) education among parents of preterm infants in the neonatal intensive care unit (NICU). *J Neonatal Nurs* 2017;23:103-08.
10. **Bartlow KL, Cartwright SB, Shefferly EK.** Nurses' knowledge and adherence to sudden infant death syndrome prevention guidelines. *J Pediatr Nurs* 2016;42:7-13.
11. **Bullock L, Mickey K, Green J, Heine A.** Are nurses acting as role models for the prevention of SIDS? *MCN Am J Matern Child Nurs* 2004;29:172-77.
12. **Aris C, Stevens T, Lemura C, et al.** NICU nurses' knowledge and discharge teaching related to infant sleep position and risk of SIDS. *Adv Neonatal Care* 2006;6:281-94.
13. **Peeke K, Hershberger M, Kuehn D, Levett J.** Infant sleep position: nursing practice and knowledge. *MCN Am J Matern Child Nurs* 1999;24:301-04.
14. **Grazel R, Phalen A, Polomano R.** Implementation of the American Academy of Pediatrics recommendations to reduce sudden infant death syndrome risk in neonatal intensive care units: an evaluation of nursing knowledge and practice. *Adv Neonatal Care* 2010;10:332-42.
15. **Patton C, Stiltner D, Wright K, Kautz D.** Do nurses provide a safe sleep environment for infants in the hospital setting? An integrative review. *Adv Neonatal Care* 2015;15:8-22.
16. **Huffman A, Smok-Pearsall S, Silvestri J, Weese-Mayer D.** SIDS risk factor awareness: assessment among nursing students. *J Obstet Gynecol Neonatal Nurs* 1999;28:68-73.
17. **Lerner H, McClain M, Vance JC.** SIDS education in nursing and medical schools in the United States. *J Nurs Educ* 2002;41:353-56.



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