School Nurses' Knowledge and Comfort with Concussion Management in the School Setting

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No disclosures
Concussion
Background

• Concussion is a common occurrence in children participating in school activities.\textsuperscript{1} Approximately 1.1 to 1.9 million sports-related concussions occur annually in children ≤ 18, and the incidence is on the rise.\textsuperscript{2,3}

• Early recognition and assessment of concussed individuals can help prevent further injury and complications.

• School nurses play an important role in prevention, detection, and early treatment of school injuries.

• Limited data are available describing school nurses’ comfort, knowledge, education, and preferred learning strategies regarding concussion management.

1. CDC, 2019
2. Bryan et al., 2016
3. McCrory et al., 2017
Purpose of the Study

• Assess knowledge and comfort of school nurses across the United States.
  – Aim 1: Collect information about the school nurses' knowledge related to concussion state legislation and guidelines
  – Aim 2: Collect information about the school nurses' comfort with managing concussion in the school setting
Study Design and Subjects

• Observational study to collect information across the US from school nurses with varying levels of education, experience, and who work with children of different ages from elementary school to high school.

• A one-time anonymous survey in Qualtrics

• Distributed to approximately 17,000 school nurses by the National Association of School Nurses (NASN) and Independent School Nurses Association (ISNA) to all members.
  – Length: 40 questions, 10 minutes to complete
National Distribution by State

50 States, D.C. and Puerto Rico

Participant total: 298
Demographics

Gender

- Male: 0.00%
- Female: 100.00%

Highest Academic Degree Earned

- Bachelor Degree: 62%
- Masters Degree: 13%
- MSN: 10%
- DNP: 0%
- PhD: 1%
- Other: 3%

n = 303
n = 302
Demographics: Experience

Number of Years in Clinical Practice
- 0-5 years: 73%
- >5-10 years: 10%
- >11-15 years: 11%
- >15 years: 5%

Number of Years of Experience as a School Nurse
- 0-5 years: 33%
- >5-10 years: 32%
- >10-15 years: 18%
- >15 years: 17%

n = 300
n = 303
School Demographics

Private vs. Public

- Public: 86%
- Private: 14%

n = 298

What is the Student Population at the School?

- >1501 Students: 21%
- 1001-1500 students: 12%
- 500-1000 students: 37%
- 0-499 students: 30%

n = 300
School Demographics

Where is the School Setting?

- Rural: 31%
- Suburban: 47%
- Urban: 22%

n = 300

Does your school district have a concussion management policy to help students return to school after a concussion?

- Yes: 55%
- No: 26%
- Unsure: 15%

n = 285
Aim 1: Collect information about the school nurses' knowledge related to concussion *state legislation and guidelines*

![Bar chart showing familiarity with concussion legislation in the state.](chart1)

- **Familiar**: 30%
- **Not Familiar**: 70%

**How familiar are you with the concussion legislation in your state?**

**n = 270**

![Bar chart showing familiarity with the 2012 Zurich Consensus Statement.](chart2)

- **Familiar**: 10%
- **Not Familiar**: 90%

**How familiar are you with the 2012 Zurich Consensus Statement on Concussion in Sports and the guidelines established in the statement?**

**n = 270**
Aim 2: Collect information about the school nurses' comfort with managing concussion in the school setting

What is your level of comfort with recognizing concussion symptoms? n = 270

- Comfortable: 56%
- Not Comfortable: 44%

What is your level of comfort with assisting with return to learn recommendations made by the medical providers? n = 270

- Comfortable: 60%
- Not Comfortable: 40%
Quiz Results: Knowledge about managing concussion in the school setting

CONCUSSION KNOWLEDGE

Q 1 98%
Q 2 76%
Q 3 97%
Q 4 97%
Q 5 37%
Q 6 90%
Q 7 94%
Q 8 98%
Q 9 94%
Q 10 46%

n = 268
Effect of Nursing Experience on Quiz Performance

• 10 - question concussion management quiz
  ➢ Every additional question answered correctly on the quiz increased the odds of the participating nurse having greater than 15 years’ clinical experience by 2.9 (p = 0.035, 95% CI: 1.08 – 7.89).
  ➢ Interestingly, highest educational degree and years in practice as a school nurse are not predictive of quiz performance.
Concussion Quiz Score vs. Setting

- Urban: n=66
- Suburban: n=140
- Rural: n=94
Concussion Quiz Score vs. Comfort: Return to Learn

- n=162
- n=99
- n=9

![Box plot showing concussion quiz scores](image-url)
Concussion Quiz Score vs. Comfort: Return to Play

![Concussion Quiz Score vs. Comfort: Return to Play](image-url)
Desired Learning Topics

- State legislation and guidelines: 171
- Prevention information: 134
- Detection information: 191
- Return to learn guidelines: 203
- Return to play guidelines: 158
- Other: 15

Chart showing the desired learning topics and their respective numbers of preferences.
Limitations

- All questions were optional
- Respondents self selected
- Self-reported
- Subjective assessment of their understanding
- Unable to perform follow up
Conclusion

• **Aim 1:** Collect information about the school nurses' knowledge related to concussion state legislation and guidelines
  – 70% reported being familiar with legislation
  – 90% reported being familiar with guidelines

• **Aim 2:** Collect information about the school nurses' comfort with managing concussion in the school setting
  – 56% reported being comfortable with identifying concussion
  – 60% reported being comfortable with return to learn
Summary

• Majority of school nurses were not familiar with their state legislation and the Zurich Concussion Guidelines.

• Majority of school nurses felt comfortable with concussion management in school settings.

• Quiz results revealed knowledge of concussion management was most dependent on work experience rather than educational level and the scores seemed independent of the settings and comfort levels.

• More research is recommended to objectively measure knowledge to improve and inform future practice.
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References


