

Exploring the Evidence-base for the Relationship between Health and Learning

An adventure in nursing!

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Objectives

- 1. Describe the process of launching the evidence search.**
- 2. Describe relevant tools and methods.**
- 3. Identify 11 original hypotheses and corresponding evidence-based statements.**

Ready for the Journey

- **The unique role(s) of the school nurse**
- **Medically-sound, evidence-based best practices in our specialty role**
- **Quality improvement strategies for school nursing practice**

The Unique Role of the RN School Nurse

- RN Nurse-driven
- Medically current and clinically demanding
- Individual-level direct care *and* population-based
- Individual and *systems*-based interventions
- Delivered in absence of parent yet family-centered
- *Highly* collaborative: multidisciplinary practice in a non-health environment

Actually, it's *Roles*

- Indirect as well as direct provision of nursing care
- Leadership role expressed as consultant, supervisor, content expert/educator, facilitator
- Unique strength linking community resources to the school
- Considerable time, effort, and expertise dedicated to planning
- Prepare students for lifelong adaptation and self-management.

and *Legal Functions*

- ***Competency Determination*** = affirmation that at a point in time an individual demonstrated sufficient knowledge, skill, and intent to fulfill an assigned specific function.
- ***Delegation*** = the transference from one individual to another the authority, responsibility, and accountability to perform nursing interventions.
- ***Supervision*** = the provision of oversight and includes retaining accountability for determining whether or not nursing care is adequate and delivered appropriately.
- ***Consultation*** = providing information and guidance for use in problem-solving to improve care.
- ***Influenced by federal law, state statute and regulation, local school policy, and workplace agreements (job descriptions and contracts).***

Quality Improvement in School Nursing Practice

1. Always study
2. Rigorously apply the nursing process
3. Be knowledgeable about applicable laws, statutes, regulations, and policies
4. Ground your information and resources in evidence-based, theoretically-sound, best practice
5. Acknowledge and be true to your professional values: e.g., family-centered care, cultural frameworks, age-appropriate, respect for individual rights
6. Give some thought to your documentation practices: communicate professionally, consistently, cite important sources.

Tools for the Road

1. Grounding in Evidence-based Practice and Policy

- Your job is to develop a vocabulary, a purpose, and parameters for your search.
- Evaluating the Quality and Merit of the Evidence:
 - Vessey, JA et al (2007). Development of the Massachusetts School Nurse Research Network (MASNRN): A practice-based research network to improve the quality of school nursing practice. *Journal of School Nursing*, 23(2), 65-72.
 - Adams, S and AM McCarthy (2005). Evidence-based practice and school nursing. *Journal of School Nursing*, 21(5), 258-265.

Evidence-based practice is...

Applications of interventions tested in more than one rigorous study (multiple case studies, randomized control trials) and consistently found better than a placebo or no intervention.

from:

School Mental Health Project/Center for Mental Health in Schools, UCLA. Evidence-based practices in schools: concerns about fit and implementation. Addressing Barriers to Learning 12(3). Summer 2007. Available at:

http://smhp.psych.ucla.edu/pdfdocs/Newsletter/summer_07.pdf

Search Parameters

- Recent publication date (1998 or later)
- English only
- Comparison or intervention data
- Excluded if descriptive only in nature

- *“Worthy Mention”*
 - Useful source information
 - Comprehensive review
 - Literature search without new data
 - Compelling info dated prior to 1998
 - Prevalence or trend data without comparison or intervention

Four basic tools, *cont.*

2. Know your Data

- **Relatable and reliable comparison measures, trends and rates.**
- **Child health data inventory posted at <http://dhhs.ne.gov/SchoolHealth/ChildHealthDataInventory1008.pdf>**

Four basic tools, *cont.*

3. PICO questions

- *Population, Intervention, Comparison population, Outcome*
- *What works for children? Evidence Guide*
<http://www.staff.city.ac.uk/~ra633/docs/tools/evguide%20guide%20WEB.pdf>
- Melnyk, B and Fineout-Overholt, E. Evidence-based practice in nursing and health care: a guide to best practice. Lippincott Williams & Wilkins: Philadelphia. 2005. (See especially six question templates on p. 31.)

Four basic tools, *cont.*

4. Medical library resources

- www.unmc.edu/library/ ; askus@unmc.edu
- Teresa Hartman, MLS, UNMC McGoogan Library of Medicine thartman@unmc.edu
- RefWorks® www.RefWorks.com
an online research management tool

Project Description

“Exploring the Evidence-base for the Relationship between Health and Learning”

- 10 statements: Hypotheses
- 11 PICO Questions
- Citation retrieval and literature review
- 250+ reviewed, 145 cited ; *Updated May 2010*
- Modified hypotheses
- Project summary with bibliographies posted at www.dhhs.ne.gov/schoolhealth/EvidenceBased.pdf.

Applying the Scientific Method

- **Ask a Question**
- **Do Background Research**
- **Construct a Hypothesis**
- **Test Your Hypothesis by Doing an Experiment**
- **Analyze Your Data and Draw Conclusions**
- **Communicate Your Results**

LIMITATIONS

- Parameters of the literature search.
- Limited number of qualifying studies and noncomparable outcomes.
- Academic measures and health measures:
 - most health studies do not use measures of school-related outcomes;
 - academic measures do not include health assessment;
 - where such measures are used, inconsistent use of terms and definitions.
- Children as subjects
- Health = Chronic Disease ??? Nutrition?? And other vocabulary issues.

Making Connections

- **You can do this! Exploration is fun! You might be surprised!**
- **A sure bet for a growth experience: take a closer look at what you believe to be “true” about your practice.**
- **An examination of the basis of your practice can be very invigorating and empowering.**
- **Expanding the scope of information and resources**

Question 1: Screening

- ***Hypothesis:*** Where schools have screening programs for vision, hearing, and dental, student performance is better.
- ***PICO question:*** In children and youth aged 5-17 years, what is the effect of school health screening and referral services for vision, hearing, and oral health on learning performance, compared with groups of children where screening services are not performed?

Exploring the Evidence-base

1. Evidence supports mental health screening of adolescents.
 - The median estimate of the prevalence of any psychiatric disorder prior to age 18 was about 25% ; 7% of children experience impairment
 - Mental disorders are strongly associated with school drop out
 - (Quality) Intervention is effective
 - Mental health in adolescence relates to mental health in adulthood
 - www.ahrq.gov/clinic/uspstf09/depression/chdeprs.htm

More about the mental health of children and youth

- Suicide is the third leading cause of death (11%) for children aged 12-19 in the U.S.
- Mental illness
- Non-Suicidal self injury
- School engagement
- Growing up is hard to do:
 - *LGBT youth*
 - *Substances: underage drinking and binge drinking*
 - *Developmental aspects of youth problem-solving*
 - *Vulnerability to cumulative grief experiences*
 - *Veteran's families*
 - *Parental mental illness*
- Children with special health care needs
- Risk and Protective Factors for youth suicide

Risk Factors - Summary

- **Mental disorders, substance use**
- **History of trauma or abuse**
- **Previous suicide attempt**
- **Family history of suicide**
- **Significant loss**
- **Easy access to lethal means**
- **Lack of social support and sense of isolation**
- **LGBTQ www.thetrevorhelpline.org**

Protective Factors - Summary

- **Effective clinical care for mental, physical, and substance use disorders**
- **Easy access to a variety of clinical interventions AND support for seeking help**
- **Restricted access to highly lethal means of suicide**
- **Strong connections to family and community support**
- **Support through ongoing medical and mental health care relationships**
- **Skills in problem-solving, conflict resolution and non-violent handling of disputes**
- **Cultural and religious beliefs that discourage suicide and support self-preservation**

www.wellaware.com

Exploring the Evidence-base

2. **Physical activity stimulates learning.**
 - **Physical fitness is significantly related to school achievement.**
 - ***Vigorous* physical activity boosts performance.**
 - **No *negative* impact of physical education.**

3. **Nutrition affects learning and behavior.**
 - **Breakfast improves attention, memory, test performance, attendance, weight control.**
 - **Food insufficiency relates to poor behavioral and academic function in low income children.**
 - **Food quality and frequency may relate to positive effects.**

Exploring the Evidence-base

4. Chronic illness affects attendance and performance.

- ***Asthma...attendance. Performance effect is related to asthma severity. Management improves with education.***
- ***ADHD...attendance, performance, and persistent problems***
- ***Chronic pain or illness...attendance, effects on performance when absenteeism is extreme; relationship between chronic pain, depression, and absenteeism; diabetes and depression***
- ***Obesity... closely related to: socioeconomic status and stress of poverty, low levels of physical activity, associated with poorer attendance; variable on performance; muted in gen'l pop.***

Exploring the Evidence-base

- 5. Chronic illness management by the school nurse reduces absenteeism.**
- 6. Poor air quality has profound effects on brain function.**
- 7. Performance and learning are profoundly affected by sleep. Chronic sleep deprivation is linked with higher risk of obesity.**

Questions 8 & 9:

Coordinated School Health Programs

- **What is the evidence base for CSHP resulting in health or performance gains?**
 - Eight domains of CSHP: PA, Nutr, Health Ed, Enviro, Health Svcs, Mental Health, Fam/Comm, staff HP.
- **2 PICO questions**
 - In schools, what is the effect of CSHP on absenteeism or measures of performance, compared with schools without CSHP?
 - Schools with staff health promotion activities have improved measures of student performance, compared to schools without staff health promotion activities.

Exploring the Evidence-base

- 8. Coordinated School Health Programs are considered promising because of evidence for effects in some domains, but the evidence for all components operating together to produce gains in student learning is weak.**

- 9. There is no evidence that staff health promotion produces positive impacts for student learning.**

Question 10: High School Dropout

- Question 10 explores the evidence base for the statement:
“High school dropout is a public health issue.”
- What is the relationship between chronic illness and educational attainment?

Exploring the Evidence-base

10. Health and Education outcomes in populations are closely linked.

- Children with some chronic illnesses and mental illness experience lower educational attainment. *Match* outcomes of peers: sarcoidosis, cancer. *Do not match* peers: ADHD, speech and language, mental disorders.
- Individuals who do not graduate from high school suffer more chronic health issues, disability, and health risks than those who do graduate.
- Health and educational outcomes are mediated by complex social, economic, interpersonal, and psychological factors.

More about high school drop out

- **Many factors that predict poor health in childhood and adolescence also predict low academic attainment**
 - **Low SES**
 - **Low parental educational attainment**
 - **African American or Hispanic**
- **Complicated by environmental exposures and low quality schools**
- **Measured in terms of economic impact, high school dropout has significant social impact**

Breslau's excellent review

Breslau J. (2010) Health in childhood and adolescence and high school dropout. California Dropout Research Project #17. University of California Santa Barbara.

Available:

http://cdrp.ucsb.edu/dropouts/pubs_reports.htm.

Breslau's excellent review

- **Managed asthma and diabetes are not responsible for dropout; management and education improve academic performance**
 - *Diabetes and learning deficits due to severe hypoglycemia*
 - *Diabetes and depression*
- **Two particular types of psychiatric disorders associated with dropout**
 - *ADHD*
 - *Externalizing/Conduct disorders*
- **Obesity and low attainment, depression**

Question 11: Life Course Development

Last but not least,

- Question 11 explores the evidence base for the life course development model.
- *Does health status in childhood predict health status in adulthood?*

Exploring the Evidence-base

11. Conditions of childhood, including some health conditions, are predictive of health issues in adult populations.

- **Conditions impacting the life course:**
 - Abuse and neglect in childhood, high stress
 - Mental Illness in Adolescence
 - ADHD
 - Educational attainment
 - Mediated by: poverty, cognition
- **Most functional difficulties in children with special health care needs are respiratory or mental health in nature.**
<http://nschdata.org/viewdocument.aspx?item=256>
- **Asthma in the general population: higher among children under age 15 than among persons aged 15 – 34 years and 35 and over.**
http://www.cdc.gov/nchs/data/nhis/earlyrelease/200903_15.pdf
- **Risk of diabetes increases steadily with age.**
http://www.cdc.gov/nchs/data/nhis/earlyrelease/200903_14.pdf

Making Connections

- **Break down the barriers that isolate your practice from the bigger picture of child and family wellbeing in your community**
- **Make use of the network that surrounds you**
- **Dissemination and Application**
 - From evidence-based relationships to
 - Evidence-based practice, policy, and intervention
- **Priorities and Recommendations**
- **Call to Action**
- **Contribute to the evidence-base**

Priorities and Recommendations

1. Address the mental health issues of adolescents.
2. Improve physical fitness of children
3. Provide breakfast to any hungry child; provide healthy school food environments; address systemic food insufficiency
4. Promote optimal asthma management and education; good air quality environments
5. Address obesity risk factors as early as possible

Priorities and Recommendations

- 6. Provide children with ADHD a positive school experience**
- 7. Assure optimal air quality in learning environments, homes, and communities**
- 8. Assure adequate sleep for age**
- 9. Assure every child graduates from highschool**
- 10. Identify and provide intervention for very young children experiencing persistently and severely stressed environments**

Call to Action

- *Provide a positive school experience for children with ADHD*
- *Youth suicide recognition and prevention*
- *Contribute to the research: Chronic disease management by school nurses; impact on obesity*
- *Contribute to the understanding of health disparities with emergence of obesity and chronic illnesses in childhood*
- *Be a transformational leader in your community*

Bibliography and resources

Child health data inventory posted at

<http://dhhs.ne.gov/SchoolHealth/ChildHealthDataInventory1008.pdf>

Project summary with bibliographies:

www.dhhs.ne.gov/schoolhealth/EvidenceBased.pdf

With additional resources on: life course development; school engagement; and youth suicide prevention

Thank You!

**Feel free to contact me with your
questions and insights!**

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www.dhhs.ne.gov/SchoolHealth