Current Practices in Data Management Education in Nursing Doctoral Programs

American Association of Colleges of Nursing
Celebrating 50 Years as the Voice of Academic Nursing

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Background

- Exponential growth in doctoral programs
- Data integral to doctoral nursing degrees
- Increased attention to data management
- Funding agencies require data management plans

Growth in Doctoral Nursing Programs: 2006-2018

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Data management

Throughout the data life cycle:
- Planning
   - Collecting
      - Processing
         - Analyzing
            - Publishing
            - Sharing
               - Preserving
                  - Re-using

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PURPOSE

Identify existing data management education practices throughout the data lifecycle for DNP and PhD programs across the United States

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Methods

- Surveys
  - Two surveys specific to DNP or PhD program
  - Multiple responses allowed
  - Open ended questions

- Invited 470 Program Directors
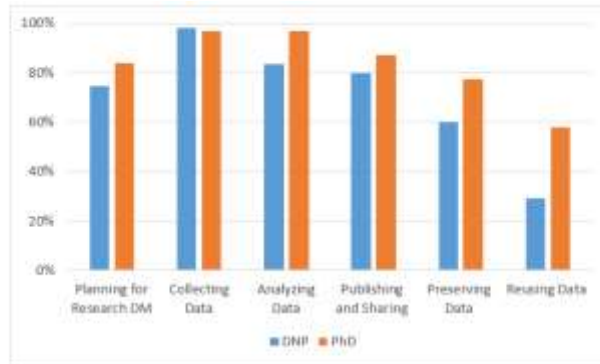 - 332 DNP Directors
  - 138 PhD Directors

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Results

- 104 responses; 22% response rate
  - 64% DNP programs
  - 35% PhD programs

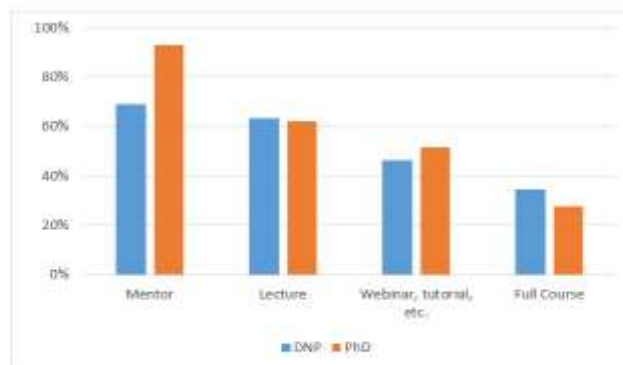UIC COLLEGE OF NURSING

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Data Management Education

DM·being·Taught·within·DNP·and·PhD·Programs'

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Data Management Education

How·DM·is·being·Taught·within·DNP·and·PhD·Programs

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Who is teaching data management?

	DNP	PhD
■ Nursing faculty	98%	97%
■ Statisticians	37%	62%
■ Non-Nursing faculty	14%	24%
■ Librarians	18%	14%

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Data Management Plans

Structured document, describes types of data, software, hardware used, policies and procedures for data storage and sharing

Data management plans

- Half DNP programs required plan within DNP Project Proposal (50%)
- Almost half PhD research proposals required plan (48%)

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IRB protocols

DNP

- 73% require QI determination review
- 65% require expedited or full IRB Human Subjects Review
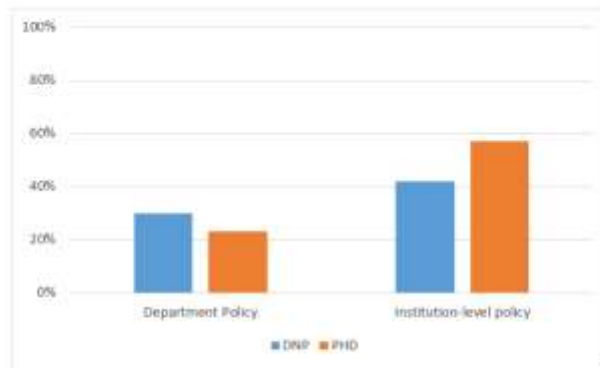- Other responses: internal college review, compliance officer review

PhD

- 71% require exempt determination review
- 81% require expedited or full IRB Human Subjects Review

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Publishing & Sharing Policies

Is there a Department Level Data Policy that Applies to Students versus
Is there a University or Institution-Level Data Policy that applies to Students

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Resources for de-identification

- DNP
  - 44% do not have de-identification resources
  - 30% did not know

- PhD
  - 45% had de-identification resources
  - 39% did not know

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Sharing data

- DNP Students:
  - Faculty mentor 96%
  - Committee 73%
  - Agency 63%
  - Statistician 61%
  - College 41%
  - University 20%
  - Public available 6%

- PhD Students:
  - Faculty mentor 90%
  - Committee 68%
  - Agency 10%
  - Statistician 77%
  - College 6%

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Preserving data: Storage

Institutional data storage

- DNP
  - None   57%
  - Campus Shared   28%
  - Unsupported cloud   6%
  - College shared server   6%
  - College DropBox 6%

- PhD
  - None   29%
  - Campus Shared 48%
  - College shared server   32%
  - Unsupported cloud   6%
  - College DropBox   3%

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Preserving data: Archive

Institutional data archive

- DNP
  - None   60%
  - Campus Shared   20%
  - College shared server   7%

- PhD
  - None   66%
  - Campus Shared 24%
  - College shared server   17%

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Supplemental file retention
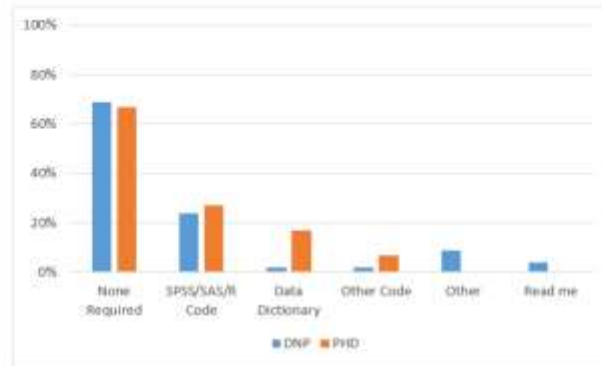
Which·Supplemental·Files·are·recommended·or·required·when·Preserving·a·Student's·
Project·Data·after·the·Project·is·completed

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Who is responsible for student data?

- DNP
  - Student   83%
  - Faculty mentor   28%
  - College   17%
- PhD
  - Student   80%
  - Faculty mentor   30%
  - College   13%

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Re-using data

Who authorizes data re-use?

- DNP
  - Student   64%
  - Faculty mentor 39%
  - College   18%
  - Campus partner 16%

- PhD
  - Student   69%
  - Faculty mentor 34%
  - College   21%
  - Campus partner   7%

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Campus data management partners

- DNP
  - None   31%

  - Library   42%
  - Campus IT   38%
  - Office of Research 27%
  - Graduate School   24%

- PhD
  - None   30%

  - Library   23%
  - Campus IT   60%
  - Office of Research 37%

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Discussion

- No systematic data management approach or resources
- Ad hoc data management instruction
- DNP programs more likely to lack resources

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Underprepared students and overwhelmed DNP faculty mentors

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Faculty mentorship may have worked for small number of PhD candidates, but not for tsunami of DNP students

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The current ad-hoc state of data management in nursing education requires an overhaul and adoption of a culture of data

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Recommendations:
Infrastructure, Policies, Practices, Curricula

- Appoint College of Nursing Data Steward accountable for data management lifecycle
- Adopt standard data management policies
- Institutionalize data management plans in DNP Project, PhD dissertation process
- Establish secure data storage solutions
- Develop campus partnerships for training, infrastructure

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Recommendations

- Standard data management curriculum
- Systematic and ongoing training for:
  - Students
  - Faculty
  - Administrators
  - IT
- **Priority: data protection**
  - Limiting access to data, safeguarding data systems and storage, ensuring data integrity

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