Purpose

- Patterns of health and chronic disease burden differ by region
- Nursing curriculum should align with local/regional individual and population health needs
- Population health needs should be considered in the study of specific nursing situations
- Understanding disease burden by region is essential to building appropriate nursing curricula with pertinent exemplars
- Regional disease burden of South Texas has not been reported

The purpose of this study is to describe the disease burden across 40 South Texas counties for an 8 year period; systematically assess health and chronic disease shifts for an 8 year period; and provide information to update exemplars in a concept based nursing curriculum.

Setting

- 40 counties comprise the study boundaries of South Texas
  - Square land miles of the area is 44,300, larger than 6 Northeastern states combined (Rhode Island, Delaware, Connecticut, New Jersey, New Hampshire, & Vermont)
  - Predominately rural (n = 28, 65%)
  - Substantial number considered border counties (n=18, 45%) within 100 km of the Rio Grande on the U.S. border of Mexico.  
- Population in the 40 counties is:
  - 4,708,676, with nine counties having experienced a decrease in population and 31 counties having shown an increase over the last 10 years  
  - Predominately white (83.5% to 98.8%)  
  - Predominately Hispanic (17.68% - 95.8%), with the majority (n=26, 65%) of counties more than 50% Hispanic  
  - Poor with poverty ranging from 9.4% to 35.4% per county with a majority (n=22, 55%) greater than 20% poverty  
  - Young with a median age among the counties range from 28.1 to 49 years old with the majority (n=27, 68%) older than the Texas median age of 33.6 in one of the five youngest states in the United States  
  - Hospitals are located in 25 (62.5%) counties with 6 (15%) having critical access hospitals. Fifteen counties have no hospital, critical access hospital, or ambulatory surgical centers.  
  - Pre-licensure registered nurse educational programs are located in 6 (15%) of the 40 counties. The number of associate degree nursing programs (10) is higher than the number of baccalaureate programs (8).  
  - Twenty-one of the counties are below the state RN to 100,000 population average of 443.7 RNs per 100,000 population and none are at the highest level (1312.6-2044.8 RNs to 100,000 population).

South Texas Counties with Hospitals, CAH, and/or ASC (green) and Schools of Nursing (A, B)

Methodology

- De-identified data from the Texas Healthcare Information Collection (THIC) was used to determine scope and change in chronic disease burden related to Diabetes Mellitus (DM) across 40 counties in South Texas from 1st Quarter 2008 to 1st Quarter 2015.
- The THIC database, built with healthcare data from the hospitals and ambulatory surgical centers, collected by the Texas Department of State Health Services, and the U.S. Census, was used to analyze data for the study.
- The THIC database was updated from the Texas Board of Nursing and Texas Workforce Development.

Findings

The number of hospitalized cases for Diabetes Mellitus tripled during the eight years from 2008 to 2015. The number of days individuals were hospitalized in 2015 was 4.2 times the hospitalization days in 2008. The cost of the hospitalizations increased from $9.9 million in 2008 to $15.7 million in 2015, a rate increase of 1.7.

Implications

While considering chronic disease, this descriptive study identifies opportunities for nursing education exemplars, prospects for big data analysis and research, and issues related to workforce and nursing education distribution. The findings validate the need for nursing curricula exemplars to increase emphasis on non-acute aspects of disease process and the nursing role in ambulatory and rural health. Nursing faculty, in selection of experiential learning, must consider clinical sites beyond the county where the school resides. The move of populations to metropolitan areas and the corresponding decreases in health care within the rural areas highlights the need to study the rural nursing workforce in addition to determining the financial efficacy of professional nursing roles within primary care.

Conclusions

Results demonstrate the usefulness of analyzing big datasets to examine the burden of chronic disease over time. The presence of DM as secondary, tertiary, and quaternary admission diagnoses in this study revealed a clear need to expand concept-based exemplars to encompass chronic diseases as underlying conditions associated with acute care hospitalizations. The lack of nurses and healthcare facilities in many counties complicates the delivery of timely, appropriate health care. Future studies are needed to more fully explore the professional nursing role in primary care and rural, underserved areas.

References

4. Baccalaureate and Associate Nursing Program (B.A.). The Statewide Health Coordinating Council/Texas Department of State Health Services Center for Health Statistics.