CDC/ATSDR Social Vulnerability Index (SVI): Student Research Project

The SVI is a place-based index, database, and mapping tool that helps users identify and characterize communities that are less able to prepare for, respond to, and recover from public health crises.

Student Research Project Objectives:

The SVI uses U.S. Census data on social factors (e.g., poverty, crowded housing, and population characteristics including age and race or ethnicity) to determine the relative social vulnerability of every U.S. county and census tract. Trainees can gain experience developing a public health study that uses the CDC/ATSDR SVI. Trainees will select a health outcome and a study population or location. They will then develop a research analysis from start to finish, including a literature review to identify the gaps in literature that may be addressed by the SVI. Trainees will design an analytical plan, analyze data, and write up results. At the end of this project, trainees will be able to describe their health outcome of choice with respect to the SVI using an ecological analysis.

Potential Deliverables:

This project may yield several deliverables, depending on the goals of the trainee. For undergraduate students, this project may lead to an abstract and poster or oral presentation for a conference, symposium, college colloquium, or classroom project presentation. For graduate students, this project may be useful for the deliverables listed below or for a thesis project.

Potential Deliverable Outline:

1. **Specific Aims/Research Question**
2. **Development of Concept Map**
3. **Significance and Innovation (literature review)**
4. **Methods/Approach**
    - Description of use of SVI and/or respective SVI domain
    - Description of the measurement of the health outcome of interest
    - Explanation of descriptive epidemiological methods and statistics used in analysis.
5. **Results**
    - Describe the findings from the analysis.
6. **Discussion**
    - Describe the overall meaning of the results in a public health context.
    - Include strengths and limitations of data and methods used.
7. **Conclusions**

Key Concepts: Literature Review, Research Question Development, Spatial Data Visualization, Presentation Deliverable

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Project Benchmarks

Benchmark	Description
Project brainstorming	Create 1-3 sentence research question or objective of interest that is clear and can be addressed with a cross-sectional study design. Use concept map activity to assist with constructing ideas for your research project. You may revisit your concept map at any point.
Literature review	Conduct a literature review and obtain 20 sources (minimally) that are relevant to the research question of interest (e.g., previous studies that may have connected the SVI or other similar and relevant social factors to the health outcome of interest).
Describe methodological approach to address research question	Describe population of interest, exposure of interest (SVI), and outcome of interest. Describe analytic method for spatial research question.
Results and data visualization	Write a summary of the analysis findings with accompanying tables and figures. Create data visualization to show relationship between SVI, (exposure of interest) and health outcome of interest for presentation figure.
Discussion	Create a written description of the overall findings and how the results relate to the initial research objective. Do the data support the initial hypothesis? How do the results relate to previous studies? Describe the strengths and limitations of the study.
Conclusion	Articulate the next steps that could be yielded with the results from this descriptive study. What other research questions may you be interested in exploring? Describe the public health significance of the results presented without overstating.
Final deliverable	Construct an abstract ready for conference submission. Provide deliverable to mentors for feedback and guidance prior to presenting.

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