Rural Education Initiative for Adolescent Melanoma Prevention and Detection

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Introduction

Melanoma, a deadly form of skin cancer, is a major public health concern in Oregon. In the United States, **Oregon consistently ranks in the top 10 states for melanoma incidence**.[1] Within Oregon, **rural counties carry a higher burden of melanoma**, likely due to decreased access to dermatologic care and lack of education regarding melanoma prevention and detection. Although overall Oregon death rates surpass the national average by nearly 10% (2.3 per 100,00 nationally vs. 2.5 per 100,000 in Oregon), the **death rates in rural counties are 50% higher than in urban counties** (approximately 2.2 per 100,000 urban vs. approximately 3.3 per 100,000 rural).[1] **Early intervention and education are key for preventing skin cancer**, yet Oregon has no formal, standardized curriculum to address this topic in high schools. In rural communities especially, skin cancer screening and diagnosis is largely performed by primary care providers.

Objective: To connect with Oregon high school students in rural communities and provide them with the knowledge and skills to **1)** prevent melanoma by avoidance of known risk factors and **2)** detect suspicious lesions when they arise.

Design & Setting

Design: Oregon Health and Science University medical students and Department of Dermatology faculty, in collaboration with the War on Melanoma campaign, created a **50-minute lesson plan** to educate high school students about 3 key topics:

- **Sun safety measures**
- **Melanoma risk factor avoidance**
- **Basics of melanoma self-screening**

Pre- and post-lesson plan surveys were included to collect demographic data and **assess student knowledge acquisition and attitudes toward melanoma risk factors and prevention measures**, such as tanning bed avoidance and sunscreen use. During the COVID-19 global pandemic, the lesson plan and surveys were re-formatted to provide a **virtual delivery option** so students could access the educational materials regardless of school environment.

Setting: Lesson plan delivery occurs in high schools across rural Oregon or in a virtual setting.

Participants

Participants: Teachers opt-in to receive free lesson plan materials for high school students. Students may opt-out of data collection after receiving the lesson plan. High schools were recruited via monthly outreach emails to all Oregon high schools and individual outreach to rural high school educators. As a result of prioritized rural outreach, **57% (3,158) of students receiving the lesson plan were rural, despite this demographic comprising only 38% of Oregon's total high school population.[2]**

Intervention

Intervention: Student survey responses to **knowledge, attitudes, and confidence** questions will be evaluated via separate composite scores pre- and post-intervention. Using educators as random effects to control for intra-class clustering of students within schools, linear mixed effects models will be utilized to examine changes in scores after lesson plan completion.

Figure 1: Geographic Distribution

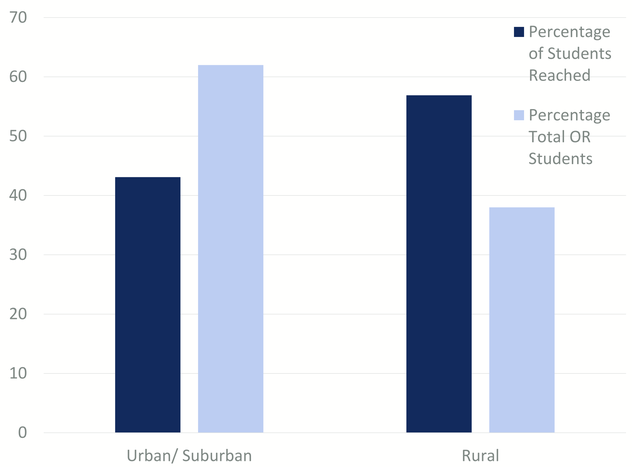


Figure 1 displays the geographic distribution of all Oregon high school students compared to Oregon high school students reached by this lesson plan.

Figure 2: Map of Oregon Counties Reached

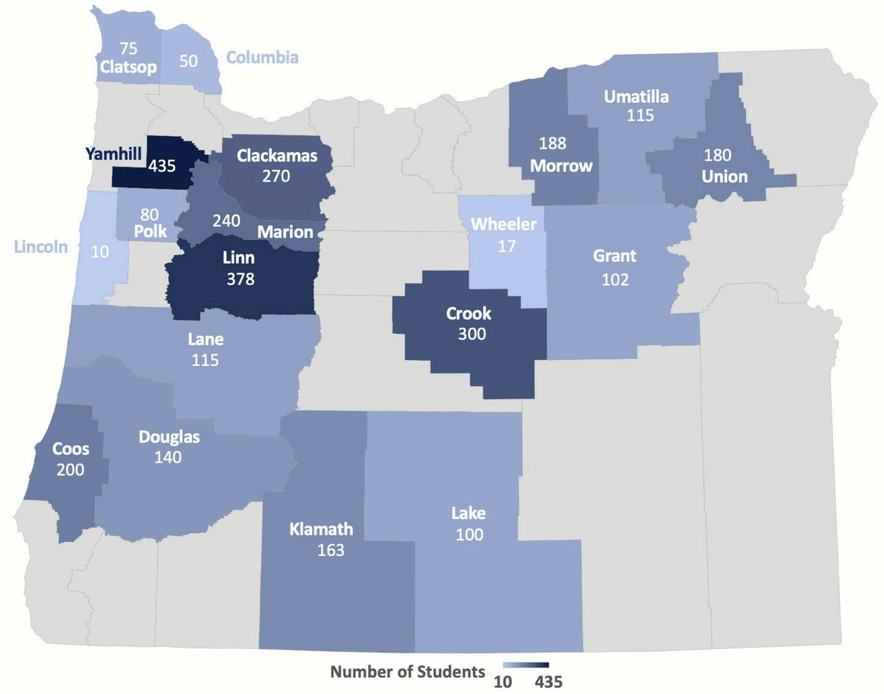


Figure 2 depicts the Oregon counties where rural high schools have received the lesson plan. The numbers in each county correspond to the number of students reached.

Conclusions

Widespread implementation of this lesson plan is feasible based on the initial uptake in rural areas and will contribute to **continued education about risk factor modification, prevention, and early detection of melanoma** for all Oregon high school students. Early intervention to improve knowledge surrounding melanoma prevention and detection will **profoundly benefit rural communities** where access to health resources is often limited. By specifically targeting schools in rural communities, the War on Melanoma School Campaign's educational efforts aim to decrease the incidence of this deadly disease in areas most affected.

References

1. USCS Data Visualizations -CDC. (n.d.). Retrieved from https://gis.cdc.gov/Cancer/USCS/DataViz.html
2. Rural Education in Oregon: Overcoming the Challenges of Income and Distance. (1 Jan 2016). Foundations for a Better Oregon. Retrieved from: https://www.betteroregon.org/assets/2016/01/Rural-Education-Report-FINAL_0.pdf.