Student-Friendly Health Information Portals

Shannon L. Woods DNP, RN, CNOR, CNE
Thomas University1; University of Central Arkansas2

Clinical Problem
No university-based health service center exists and there are limited university web-based health information resources. Thus:
1. What is the effect of online healthcare information and support systems for university students in accessing health promotion and disease prevention services when there is not a health service center?
2. For university students, what is the effect of an online interactive influenza portal on influenza vaccination rates?

Background and Significance
- Access to university-based health-care services can impact health promotion and disease prevention behaviors now and for years to come (Buech, 2011).
- Online information and interventions are successful in increasing healthcare promotion and disease prevention activities among university students (Clayton, Chin, Blackburn, & echertova, 2010; Prescott, 2011; Solomoupan, Gratesnger, Kaller, McCartney, & Brindis, 2010).
- Influenza vaccination is recommended for all individuals older than 6 months of age (Centers for Disease Control and Prevention [CDC], 2013).
- Healthy People 2020 annual initiative set a 70% benchmark for influenza vaccination of healthy individuals > 18 years of age (U.S. Department of Health and Human Services, 2015).
- CDC (2014) reported that 26.3% of 18-49 year olds in the U.S. received the influenza vaccine in the past 12 months.
- The mortality rate for the 25-64 year old age group accounted for 60% of all deaths related to influenza (in the U.S. CDC, 2014).
- The U.S. Department of Health and Human Services (USDHSS, 2015b) reports acute respiratory infections, that include influenza and pneumonia, were the eighth leading cause of death in the U.S.

Project Purpose and Objectives
Evidence-implementing project

Purpose and Objectives:
1. To establish valid and reliable online healthcare information of importance to the university student population in order to increase their health seeking behaviors, and
2. To increase (double) the number of residential and athletics students that obtain an influenza vaccination through use of the online influenza portal and health information.

Setting, Sample, and Project Design
- Setting: Private, non-profit, four-year university located in the southeastern U.S. with a student population of 1,126.
- Sample Inclusion Criteria: all residential and athletics students (N=314) - 288 athletics students and 26 residential students with no athletics involvement.
- The literature synthesis included five key themes for effective health online resources: (a) internet use, (b) importance to user, (c) access motivates action, (d) interactive components, and (e) the internet as an adjunct to other healthcare resources.
- The National Network of Libraries of Medicine (2014) online resource information evaluation criteria were used for the development of the health information which include Accuracy, Authority, Bias/Objectivity, Currency/timeliness, and Coverage.
- The items found to be of most importance to the university student were used to develop the health information portal (Kallmussman et al., 2014; Skar, Struhlt, Molloy, Prestwich, & Araugo-Saures, 2011):

Health Information Portal Content Section and Sub-Sections
- Flu and You
  Do I have the Flu
  Self-Care
  Vaccination
- Alcohol & Drugs
- Healthy Eating & Your Diet
- Mental Health
- Physical Activity
- A Fitter You at TU
- Sexual Health and Relationships
- Tobacco Use & Smoking Cessation
- Community Resources for Health

Data Collection Methods
- Influenza Survey (Pre- and Post- Intervention) – CDC (2012) with permission to modify.
- Additional questions were added to the Post-Intervention Survey regarding the Health Information Portal. This survey was in public domain and had been used in two previous research studies (University of Virginia, 2015).
- Seven week time lapse between pre- and post-intervention survey administration.
- Health Information Portal monitored by “Page View” tracking.

Results

Demographic characteristics
- Pre-intervention survey: mean age of 20 (SD = 1.52).
- Post-intervention survey: mean age of 20 (SD = 1.42).

Characteristic (%) Pre-Survey Post-Survey

<table>
<thead>
<tr>
<th>Pre-Survey (n=153)</th>
<th>Post-Survey (n=171)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>64</td>
</tr>
<tr>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>Asian</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
<tr>
<td>Pacific-Islander</td>
<td>1</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>63</td>
</tr>
<tr>
<td>Female</td>
<td>37</td>
</tr>
<tr>
<td>Use of Health Information Portal and the Influenza Portal</td>
<td>16% (28 students)</td>
</tr>
<tr>
<td>Use of Influenza Portal only</td>
<td>12% (20 students)</td>
</tr>
<tr>
<td>15% of students (26) stated that the Portal had influenced their decision to be vaccinated</td>
<td></td>
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</tbody>
</table>

Pre- and Post-Intervention Survey Self-Reported Influenza Vaccination Rates

<table>
<thead>
<tr>
<th>Pre-Intervention Survey</th>
<th>Post-Intervention Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=153)</td>
<td>(n=171)</td>
</tr>
<tr>
<td>Received influenza vaccination last season (July 2014-May 2015)</td>
<td>45 (29%)</td>
</tr>
<tr>
<td>Received influenza vaccination this season (July 2015- Present Day)</td>
<td>9 (6%)</td>
</tr>
<tr>
<td>Plan on receiving influenza vaccination this season</td>
<td>29 (19%)</td>
</tr>
</tbody>
</table>

* Students who answered, “Don’t Know” are not included in overall reporting

Discussion and Conclusions
- Students’ self-reported barriers to influenza vaccination including “I never get the flu,” “I don’t like needles,” and “It causes the flu” could be used for educational purposes of the alternatives to injection, peer presentations, and myth mitigation.
- The highest number of page views were of the physical activity pages which could be related to the sample population. The second highest page views of the influenza portal could be related to marketing strategies.
- The Healthy People 2020 influenza vaccination benchmark of 70% is a long-term attainable goal if a multi-modal approach is used. Physical healthcare resources in conjunction with the portal could affect this change which is in support of the literature.
- Healthcare portals are an avenue of health information dissemination and intervention that have the ability to be used in various venues to impact behavior change. Further research is indicated in this area especially for behavior changes that need to be maintained over time.

This project supports that technology, in the form of online health information and portals, is an effective intervention in the promotion of health and prevention of disease in university students.