Prostate cancer awareness at Brigham Young University of Idaho: A cross-sectional study [version 1; referees: awaiting peer review]

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Abstract

Background: Prostate cancer is the second leading cause of cancer death in American men, and is very common in older men. Early screenings have been proven to help diagnose prostate cancer sooner. Ignorance about prostate cancer can be a huge problem impeding men from getting screened. Hence, it is important to be aware of the disease and encourage prostate cancer screening by age 50. The purpose of this study was to establish the level of awareness of prostate cancer among college students at Brigham Young University of Idaho (BYU-I).

Methods: This survey research was conducted at BYU-I. Questionnaires were sent via email. Responses were received the same way and analyzed using SPSS.

Results: The study shows that knowledge about prostate cancer varied greatly among BYU-I students. The level of awareness is poor and is not correlated to gender or age.

Conclusion: This study shows a significant lack of awareness of prostate cancer among BYU-I students. Necessary steps should be taken to promote more awareness and early screening for prostate cancer in this setting. Educational opportunities should be offered for recognition of symptoms and to promote screening which will lead to early diagnosis and treatment.

Keywords

prostate cancer, awareness, university students
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Author roles: Mukendi AM: Conceptualization, Data Curation, Investigation, Methodology, Resources, Validation, Writing – Original Draft
Preparation, Writing – Review & Editing; Jenks D: Data Curation, Investigation, Methodology, Resources, Validation, Writing – Original Draft
Preparation, Writing – Review & Editing; Moore H: Data Curation, Investigation, Methodology, Resources, Validation, Writing – Original Draft
Preparation, Writing – Review & Editing; Ackerman V: Data Curation, Investigation, Methodology, Resources, Validation, Writing – Original Draft
Preparation, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

Grant information: The author(s) declared that no grants were involved in supporting this work.

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How to cite this article: Mukendi AM, Jenks D, Moore H and Ackerman V. Prostate cancer awareness at Brigham Young University of Idaho: A cross-sectional study [version 1; referees: awaiting peer review] F1000Research 2018, 7:1714 (https://doi.org/10.12688/f1000research.16566.1)

Introduction
Prostate cancer screening continues to be a huge controversial topic in our society mostly because of the benefit of diagnosing it versus the risk of overtreating it. Prostate cancer is not the deadliest type of cancer, but it is very common in older men. Early screenings have been proven to help diagnose prostate cancer sooner. Ignorance about prostate cancer can be a huge problem impeding men from getting screened. According to The American Cancer Society, each year more than 30,000 men die of this condition, making it the second deadliest cancer for American men. However, the American Cancer Society also stated that an early diagnosis yields a five-year survival rate of almost 100%. Hence, it is important to be aware of the disease and encourage prostate cancer screening by age 50.

This study was performed in order to establish the level of awareness of prostate cancer among college students at Brigham Young University of Idaho (BYU-I).

Methods
Study setting
Our study focused on students attending BYU-I and was conducted in February 2016 over a period of nine days. The study received approval from the Brigham Young University Institutional Review Board for Human Subjects (IRB) under reference W16-175.

The majority of students attending BYU-I have backgrounds from all over the country and most students are under the age of 30 with a few outliers. There were 17,562 students enrolled at BYU-I with 9,278 of those students being women and 8,284 men.

Participants and data collection
For our study, we used Google Forms to create a 7-question survey and used BYU-Idaho Student Research to disperse it to BYU-Idaho students’ emails. If a participant completed and sent the questionnaire back then that was considered to be consent for participation in the study.

We initially had 12 questions and decided to only use 5 of these, besides age and gender, to make the survey as short and purposeful as possible. There was no exclusion criteria to participate in the survey. Each participant received an email accompanying the survey explaining the purpose of this research and clearly stated that participation was voluntary and that the data would be confidential and anonymous (Supplementary File 1). To avoid any bias, efforts were made to have questions clear and understandable, well-structured, logical and short. Two questions used a scale and the rest required a Yes/No/I don’t know answer.

After a little over one week of compiling we received 55 responses.

Data collected by the survey was age, gender and answers to the following questions: Have you heard of prostate cancer?; Do you know or have you heard of someone suffering from prostate cancer? How familiar are you with prostate cancer?; Is one of the following symptoms of prostate cancer? (Pain, Trouble urinating, Blood in urine); Is one of the following treatments for prostate cancer? (Surgery, Radiation Therapy, Anti Hormonal therapy).

Results
In total, 17,562 students were eligible to participate in the survey. Only 55 responses were received, of which 7 had missing data and were not included in the analysis. The final data included 48 participants aged from 18 to 59 (years). 31 participants were women and 17 were men. Our sample matched the age of the BYU-I student population with a mean age of 25.5 years old, and a median of 22 years old. The study shows that knowledge about prostate cancer varied greatly among BYU-I students. Although this data represented the student body at BYU-I well, there was no correlation between age and familiarity with prostate cancer (Table 1).

We also tested to see whether or not gender and familiarity with prostate cancer would yield a correlation (Table 2). The 0.100 in Table 2 shows the correlation is very weak. Women reported to have more familiarity with prostate cancer than men. The woman who ranked her familiarity with prostate cancer the highest used an 8 on a scale of 1 to 10. The most common answers were 2, 3, and 4. These numbers are very low compared to the amount of prostate cancer that occurs in the population. It was interesting to see that although prostate cancer affects men, in our study fewer men had heard of prostate cancer than women (Figure 1).

<table>
<thead>
<tr>
<th>Table 1. Association between age and familiarity of prostate cancer in students from Brigham Young University Idaho (n=48).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How old are you?</strong></td>
</tr>
<tr>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
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<tr>
<td><strong>How familiar are you with prostate cancer?</strong></td>
</tr>
<tr>
<td>Pearson Correlation</td>
</tr>
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<td>Sig. (2-tailed)</td>
</tr>
</tbody>
</table>
Discussion

Prostate cancer is a significant public health issue in the United States. The American Cancer Society estimates that in 2011, about 240,890 men were diagnosed with prostate cancer and 33,720 men died from it.\(^1\)

Research is battling against the rising issue of prostate cancer. Attempts to increase awareness have yielded successful results. Prostate Cancer Awareness Week is held every third week of September by the Prostate Cancer Education Council, which offers a great opportunity to the community in the US to learn more about prostate cancer and to encourage early detection and diagnosis of the disease.\(^1\) Prostate cancer awareness has been one of the top priorities in order to cure or treat prostate cancer effectively.\(^3\) The Journal of Cancer Education has stated that young adults’ knowledge of cancer is not a greatly researched area.\(^5\) This disease has claimed many lives so far. The aim of this study was to highlight the level of awareness in the population of students at BYU-I, with the hope to increase knowledge of how devastating the disease is and how manageable it is with the proper treatment.

The present survey showed clear evidence of the lack of prostate cancer awareness among college students at BYU-I. Assuming that most college campuses are similar to BYU-I, the results are most likely representative of prostate cancer awareness in other undergraduate college campuses; however, due to the lack of specific data for other campuses.

### Table 2. Association between gender and familiarity of prostate cancer in students from Brigham Young University of Idaho (n=48).

<table>
<thead>
<tr>
<th>How familiar are you with prostate cancer?</th>
<th>What is your gender?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation 1</td>
<td>0.100</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.497</td>
</tr>
<tr>
<td>What is your gender?</td>
<td>Pearson Correlation 0.100</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.497</td>
</tr>
</tbody>
</table>

**Figure 1. Awareness of prostate cancer and gender among Brigham Young University of Idaho students.** Green, women; blue, men.

**Dataset 1. Survey data on prostate cancer awareness at Brigham Young University of Idaho**

https://dx.doi.org/10.5256/f1000research.16566.d222459

The key to this data is included in Supplementary File 1.
of a substantial number of responses, this data needs further investigation to be representational of under-graduate college campuses throughout the United States. Varying results will occur depending on the size of the university, environment, and whether or not the university is for post-graduates. College majors and student backgrounds may have a huge effect on college students’ awareness of prostate cancer. The awareness of this disease is not high among college aged students attending BYU-I; therefore, necessary steps should be taken to promote more awareness and early screening for prostate cancer in this setting.

Limitations
The survey only captured 55 responses out of about 18000 students, so we do not know the experiences of the majority of the student body. Time constraint were a huge factor as this was a university assignment with deadline for submission.

Conclusion
This study shows a significant lack of awareness of prostate cancer among Brigham Young University- Idaho students. Necessary steps should be taken to promote more awareness and early screening for prostate cancer. Educational opportunities should be offered for recognition of symptoms and to promote early diagnosis for a potential curative management.

Data availability
F1000Research: Dataset 1. Survey data on prostate cancer awareness at Brigham Young University of Idaho. 10.5256/f1000research.16566.d222459.

Grant information
The author(s) declared that no grants were involved in supporting this work.

Supplementary material
Supplementary File 1: Questionnaire and key for dataset.
Click here to access the data

References
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