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To cite this article: Joseph Kim, Duc Anh Ngo, Saumitra Rege, William Tolley & Christopher Holstege (2019): Impact of instituting hard-waiver on a student health insurance program at a public university, Journal of American College Health, DOI: [10.1080/07448481.2019.1662425](https://doi.org/10.1080/07448481.2019.1662425)

To link to this article: <https://doi.org/10.1080/07448481.2019.1662425>



Published online: 07 Oct 2019.



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MAJOR ARTICLE



Impact of instituting hard-waiver on a student health insurance program at a public university

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ABSTRACT

Objective: The purpose of this study is to assess the impact of implementing hard-waiver on the student health insurance landscape at a major public university. **Methods:** Data from two years before (2013–2015) and after (2015–2017) the hard-waiver program was implemented were analyzed descriptively using the university data sources. **Results:** The university-sponsored insurance group pre-waiver was made up of 4,850 students, while this group included 9,002 students after the hard-waiver program was implemented. Approximately 62% of the waived insurance group were White, compared to 47% in the university-sponsored insurance group. The White population who waived the insurance plan was 20% greater than the minority population. The proportion of the White population having a university-sponsored insurance plan was 0.6 times that of the minority population. **Conclusions:** University-sponsored insurance enrollment increased markedly following the implementation of hard-waiver and impacted various student demographic groups differently.

ARTICLE HISTORY

Received 21 November 2018
Revised 6 August 2019
Accepted 15 August 2019

KEYWORDS

Hard-waiver; student health insurance; student health; data linkage

Introduction

According to the National Center for Education Statistics, the number of students projected to attend American colleges and universities in Fall 2018 is 19.9 million.¹ The practice of university mandated health insurance is common in the United States (US) with many universities offering Student Health Insurance Plans (SHIP) under which the university itself assumes the responsibility of paying the health insurance claims for the enrolled students. The number of students covered under one of the college and university student health plans exceeded a million in 2011. While the students are not required to enroll in one of the SHIPs, most universities require the students carry health insurance. Under the health insurance hard-waiver program, students are required to carry health insurance that meets specific coverage requirements (eg comparable coverage) and provide proof of this insurance at a specified time period (eg annually). If proof of comparable coverage is not submitted (whether a student fails to submit any documentation or because a student's health plan is determined not to provide adequate comparable coverage), the student is responsible for the full cost for single coverage under the endorsed SHIP.

The major public university where this study was conducted has required students to carry health insurance since 1967. The university the Hard-Waiver Health Insurance Program in the 2015 academic year requiring all students to provide proof of health insurance meeting specific coverage

requirements. If unmet, students are enrolled in the university-endorsed Student Health Insurance Plan. Though students were required to carry health insurance prior to the program, general auditing, comparable coverage, and subsequent enrollment were not elements of that requirement. Consequently, underinsurance to no insurance at all was not uncommon in the student population, leaving many students highly vulnerable to health and financial risks. One issue brief from the Agency for Healthcare Research and Quality reported that among young adults ages 19–25, 43.1% were uninsured at some point in 2013, which was only second to 45.9% of young adults ages 26–29. The same study found that 23.7% of full-time students ages 19–25 were uninsured for some part of the year in 2013.² As such, the hard-waiver program was initiated to increase compliance of carrying appropriate health insurance in order to promote a healthier and protected student population.

The young adult population is thought to be among the healthiest and low-risk subgroups in the US, nevertheless the benefits of carrying adequate health insurance are significant as it enables stable access to the healthcare system. For example, the 2005 Commonwealth Fund Health Insurance survey found that more than half of young adults ages 19–29 lacking health insurance for any period had forgone care including failing to fill a prescription, not seeing a doctor when sick, or skipping a recommended medical test, treatment, or follow-up visit.² Especially in a college or

university setting, access to healthcare resources in a high-stress atmosphere and in a highly dense population with shared living and eating facilities is important. As an example, appropriate health insurance grants higher access to mental, sexual, and preventative care services in this population. Utilization of primary care and outpatient services reduces the odds of a student encountering the healthcare system for the first time in an emergency department. Studies cite that injury-related visits to emergency departments are far more common among young adults than they are among either children or older adults.³⁻⁵

From a societal perspective, obtaining health insurance and interacting with the healthcare system is an important part of becoming health conscience and health literate members of society. Furthermore, young adult participation in health insurance could help to offset higher-risk populations potentially lowering health insurance costs overall since individuals ages 19–29 have far lower per capital health care expenditures than older age groups.^{2,3}

This present study sought to determine the effects of the implementation of a hard-waiver insurance requirement on the student health insurance landscape at a large public university. Under the health insurance hard-waiver program, the university requires students who pay the comprehensive fee to:

1. Carry health insurance that meets specific coverage requirements (ie, comparable coverage).
2. Provide proof of this insurance to the university on an annual basis.

If proof of comparable coverage was not submitted (whether a student fails to submit any documentation or because a student's health plan is determined not to provide adequate comparable coverage), the student will be responsible for the full cost for single coverage. Understanding the health insurance behavior of students before and after the implementation of such a hard-waiver program would give insight into the demographic groups most vulnerable to not being insured, and would further help to develop specific outreach and promotion strategies, while enabling the university to tailor plan benefit packages to fit those who most need it. Furthermore, the results of such a study could be the first step to explore if there were indeed any improvements in access, utilization, and health outcomes among students as a result of such a program.

Numerous studies have analyzed the effects of the Affordable Care Act's (ACA) Individual Mandate on the uninsured population and the demographic details of this group. According to Kaiser, the number of uninsured nonelderly Americans decreased from 44 to 28 million between 2013 and 2016, effectively lowering the uninsured rate from 16.7% to 10.3%.⁶ Coverage gains were particularly large among low-income people overall, and among people of color. For example, the change in uninsured rate in the Hispanic population was calculated to be –11.0%, followed by the Asian/Native Hawaiian or Pacific Islander, Black, and White population at –7.5%, –7.2%, and –4.6%, respectively.⁶

The extent to which these national trends are reflected at a university have not been previously studied. However, due to a major public university's large and diverse student population, both racially and financially, it is likely that these national trends are reflected in some portion in this population. Thus, prior to the hard-waiver program it is reasonable to speculate that low-income and minority students were the most likely to forgo the university's insurance requirement. One study even found that minority students and students who are financing their education with loans and scholarships are at a particularly high risk of being uninsured.⁷ The hard-waiver program implemented in 2015 provided an opportunity to support this assumption by examining the number of new enrollees in the university-sponsored insurance plan by different demographic groups. Although students can obtain health insurance outside of the university, or remain under their parents plan until the age of 26, the enrollment changes occurring within the university plan still serves as a good proxy for those newly obtaining health insurance. This is because many students likely come from families without health insurance in the first place, and also because of the ease associated with obtaining the university insurance.

As such, this study investigates the effects of initiating a hard-waiver for university students in a system with a previously existing mandatory health insurance. Specifically, this study researches the demographic characteristics of those students in the university-sponsored health insurance plan compared to those of students with a waived plan and which demographic groups were most impacted by the hard-waiver program.

Methods

Study design and sample

A retrospective cross-sectional study design was employed to analyze the characteristics of the hard-waiver program. The study sample captured health insurance type and select demographic data from all students enrolled in the last four academic years (AY), including two years before (AY 2014, AY 2015) and two years after (AY 2016, AY 2017) the hard-waiver program was implemented. Because proof of health insurance was not enforced prior to the hard-waiver program in 2015, data for those students with their own health insurance were incomplete for 2013 and 2014. Thus, the demographic changes post hard-waiver implementation could only be examined in the university-sponsored insurance group where all four years of data were complete. Further, the demographic comparison between the university-sponsored insurance group and the waived insurance group was restricted to academic years 2016 and 2017.

Data collection and analysis

Data for the present study were created by linking two student datasets: The University's Student Information System (SIS) and Department of Student Health hard-waiver dataset. SIS is the university's student registry database that

Table 1. Student health insurance trends: effects of the hard-waiver program (AY 2014–AY 2017).

Characteristic	AY 2014 ^a	AY 2015 ^a	AY 2016 ^b	AY 2017 ^b
Effective date	8/15/2013–04/29/2014	8/15/2014–07/01/2015	08/15/2015–08/01/2017	08/15/2016–08/09/2017
Term date	2/14/2014–08/14/2014	12/31/2014–08/14/2015	12/31/2015–08/14/2017	12/31/2016–08/14/2017
Student plan	2,365	2,485	4,471	4,531
Waived plan ^{a,b}	18,773	19,315	17,514	17,860
Total student population	21,238	21,800	21,985	22,391
% Student plan	11.14%	11.40%	20.78%	20.57%
% Waived plan	88.86%	88.60%	79.22%	79.43%

^aFor AY 2014 and AY 2015, the waived plan was passive (not hard-waiver) and the numbers include all students in those two AYs who did not purchase the student plan.

^bFor AY 2016 and AY 2017, the waived plan was active through the hard-waiver process and included all students that were definitively confirmed to have appropriate insurance.

contains information on student demographic characteristics (eg, age, gender, and ethnicity), organizational affiliation, extracurricular activities (eg, athletic participation), schools, academic level, and academic program for each term a student is enrolled. Every student has a unique student identification number. The hard-waiver dataset captured specific student insurance details during the hard-waiver process. This dataset was then linked to select student demographic information from SIS through a unique student number.^{8,9} Race, education level, tax dependency, and residency were the demographic characteristics considered in the study. Tax dependency is used as a proxy for income status, because family financial data were not available.

Data were analyzed through three sequential steps. First, descriptive statistics were used to determine the frequency distribution of student demographic variables. Second, logistic regression was performed to assess the associations between race, education level, and tax dependency and insurance type. Odds ratios (OR) and 95% confident intervals (CIs) were computed. Finally, enrollment data available online through the university were extracted and analyzed in order to compare changes in insurance enrollment by race to changes in race in the overall student population.

Research approval was granted by university Institutional Review Board for Health Sciences Research before data collection was conducted. No consent was required from students due to the de-identified nature of the data being analyzed. All statistical tests were conducted with a two-tailed α of .05. Data were analyzed using SAS 9.4 Software (SAS Institute Inc., Cary, NC).

Results

The university-sponsored insurance group pre-waiver was made up of 4850 students, while this group included 9002 students after the hard-waiver program was implemented (Table 1). From AY 2014 to AY 2015, approximately 11% students enrolled in the university-sponsored student insurance plan, which increased to 21% in AY 2016 and AY 2017 following the implementation of the hard-waiver program. By default then, approximately 88% students passively claimed to have health insurance in AY 2014 to AY 2015 by not purchasing the student health insurance plan, whereas approximately 79% students were definitively confirmed in AY 2016 and AY 2017 after the hard-waiver program was implemented (Table 1).

Comparison of the university-sponsored insurance and waived insurance group

Figure 1 displays the racial composition of collective university student population, the university-sponsored insurance group, and the waived insurance group (the graph reflects data from the postwaiver period). Most notably, 62% of the waived insurance group were White, compared to 47% in the university-sponsored insurance group. The Black and Hispanic populations were about equally represented in each insurance group, differing by approximately one percentage point. Finally, the university-sponsored insurance group had more than twice the proportion of ‘Other’ races than the waived insurance group. Here, ‘Other’ includes those students who identify as Multi-race, American Indian, Alaska Native, Native Hawaiian, Pacific Islander, or Nonresident, and those for whom race was unknown.

Figure 2 displays insurance group composition by education level. Similar to the graduate student proportions, but not displayed here, tax-independent (students not claimed as dependents by their parents while filing the taxes) students represented 63% of the university-sponsored insurance population, while just 12% in the waived group.

Finally, in-state students represented 98% of the waived insurance group, while representing only 48% of the university insurance group (not displayed). Out-of-state and international students represent 33% and 19% of the university insurance group, respectively.

Pre and postwaiver effects on university-sponsored health insurance

Figure 3 displays enrollment numbers by race in the university-sponsored insurance population before and after the hard-waiver program. The line displayed in the graph shows the relative changes in these subgroups. Note that the relative change does not account for changes in racial composition of the overall student population. However, Figure 4 shows that no racial group in the overall population changed substantially pre and postwaiver, and is therefore unlikely to explain the observed increases in enrollment.

Overall, enrollment in university-sponsored insurance increased across all races after the hard-waiver. In absolute numbers, the largest increase occurred for the White population at 1056 new enrollees. However, relative change indicates that the most drastic increases occurred from the Hispanic, Asian, and Black populations.

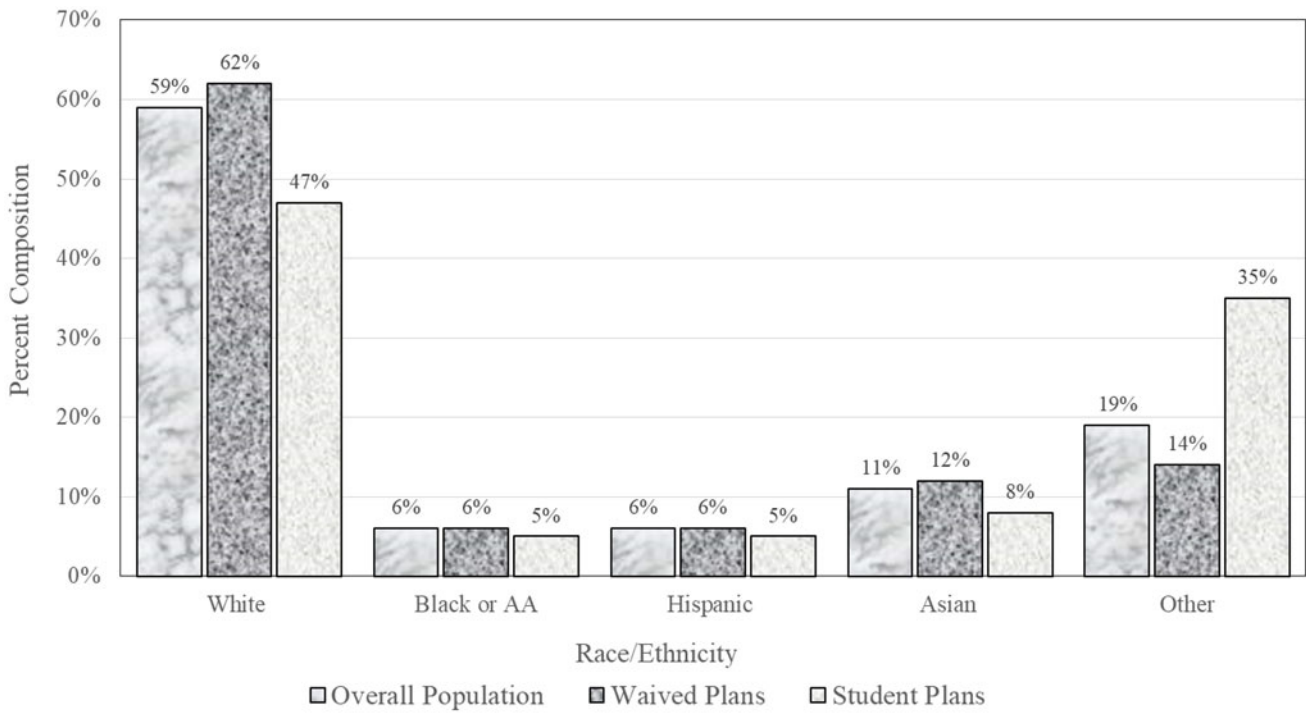


Figure 1. Health insurance type by race/ethnicity: academic years 2016–2017.

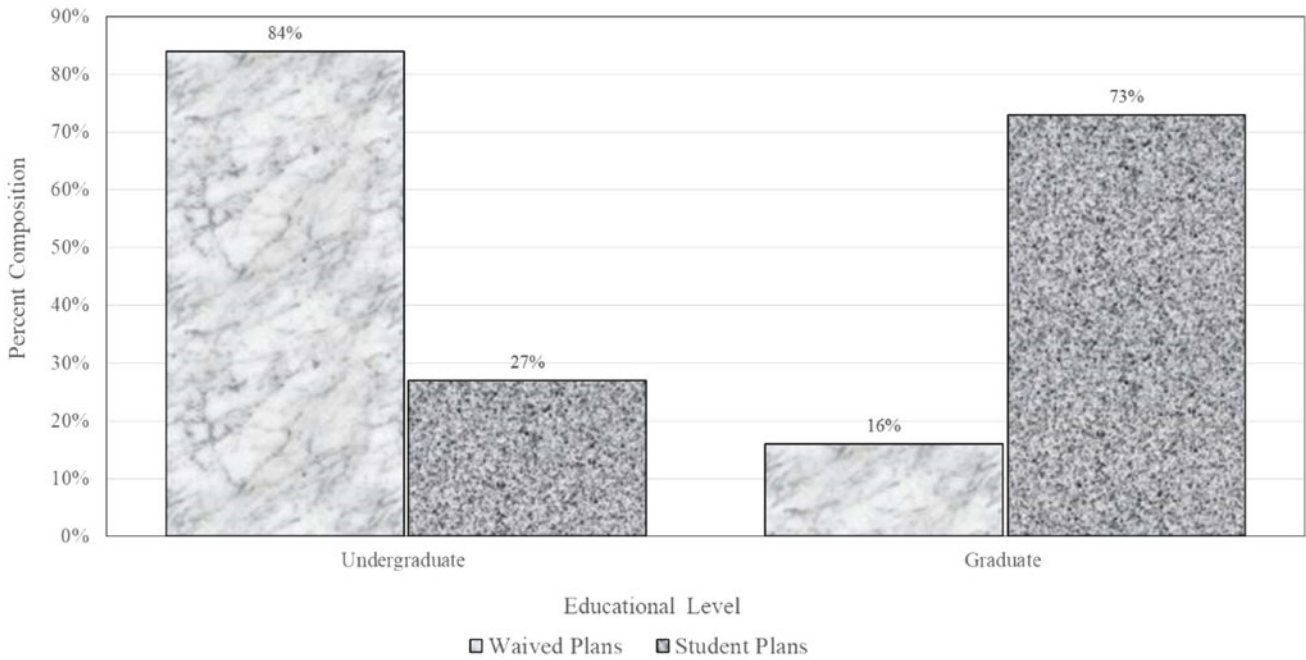


Figure 2. Health insurance type by educational level: academic years 2016–2017.

The order of increase by race was similar when looking at graduates only, but the differences in magnitude were less substantial. On the other hand, when looking only at undergraduates, enrollment increased drastically for the White population (see Figure 5). In fact, enrollment increases were drastic for all races except ‘Other’ at the undergraduate level, reflecting an overall tripling of undergraduate enrollment pre and postwaiver.

By education level, absolute increases in enrollment amongst the undergraduate and graduate population were similar at 891 and 1186 new enrollees, respectively. When looking at the relative change, however, the undergraduate population experienced a threefold increase in enrollment (see Figure 6).

Finally, when looking at tax dependency status although the absolute increases were similar for both dependent and

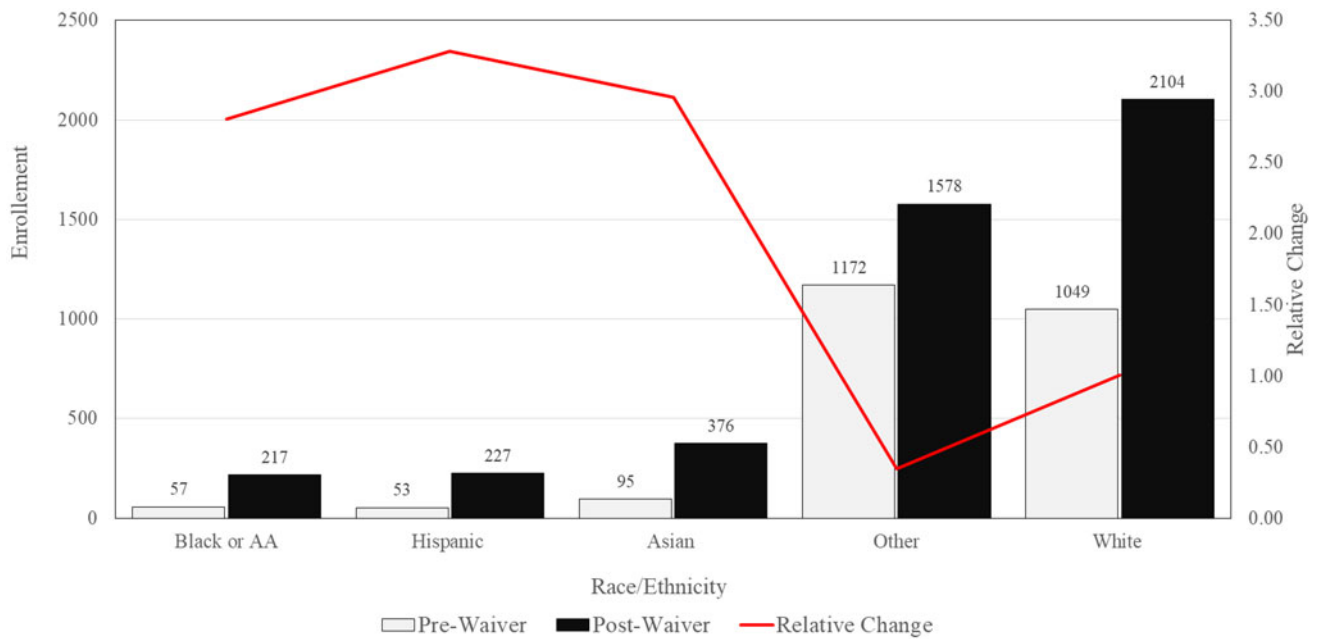


Figure 3. University sponsored insurance: changes by race/ethnicity.

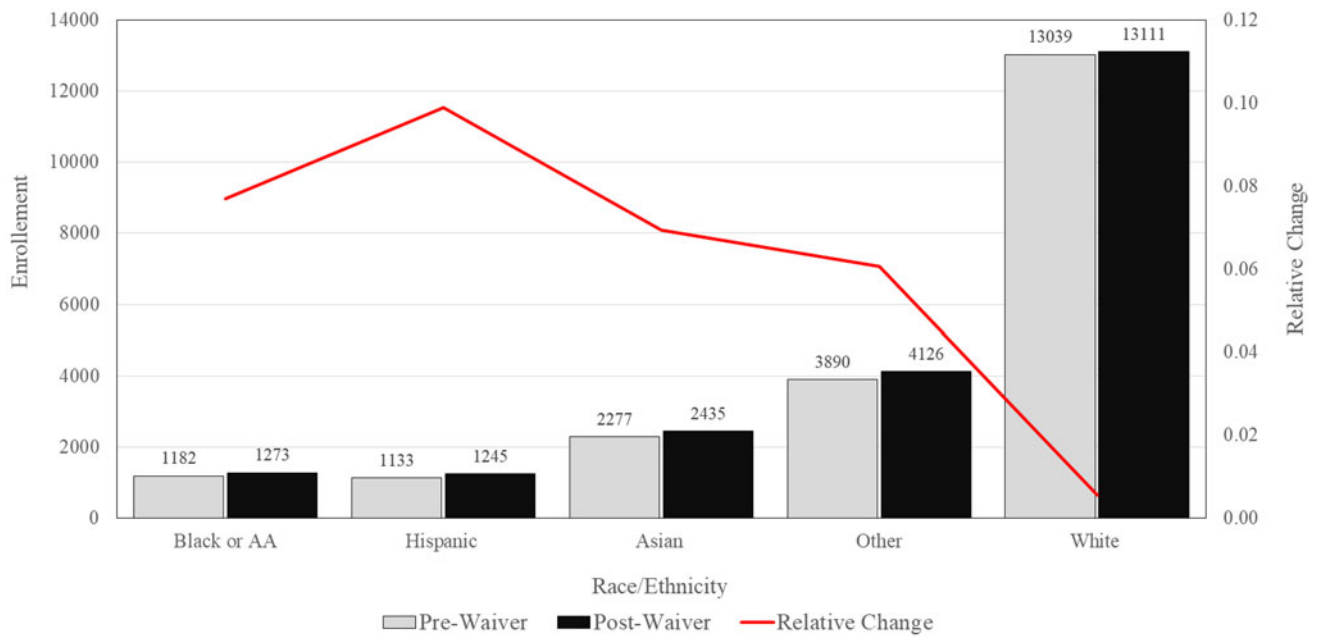


Figure 4. Overall student population: changes by race/ethnicity.

independent students, the number of tax-dependent enrollees tripled postwaiver.

Student demographic characteristics associated with enrollment in hard-waiver program

Analysis comparing the White population to the minority population, defined as Black, Hispanic, Asian, American Indian, Alaska Native, Multi-Race, Nonresident, and Unknown, demonstrated that 83.9% of the White population, compared to 73.2% of the minority population had a waived health insurance plan. In other words, the

proportion of the White population having a waived insurance plan was 1.2 times that of the minority population having a waived insurance plan (95% CI: 1.13, 1.16, $p < .0001$). Conversely, the proportion of the White population having a university-sponsored insurance plan was 0.6 times that of the minority population having a university-sponsored insurance plan (95% CI: 0.57, 0.63, $p < .0001$).

Logistic regression modeling health insurance type as a function of race, education level, and tax dependency exhibited that all three variables were statistically significant predictors for health insurance type. Table 2 highlights the calculated odds ratios comparing minority to White,

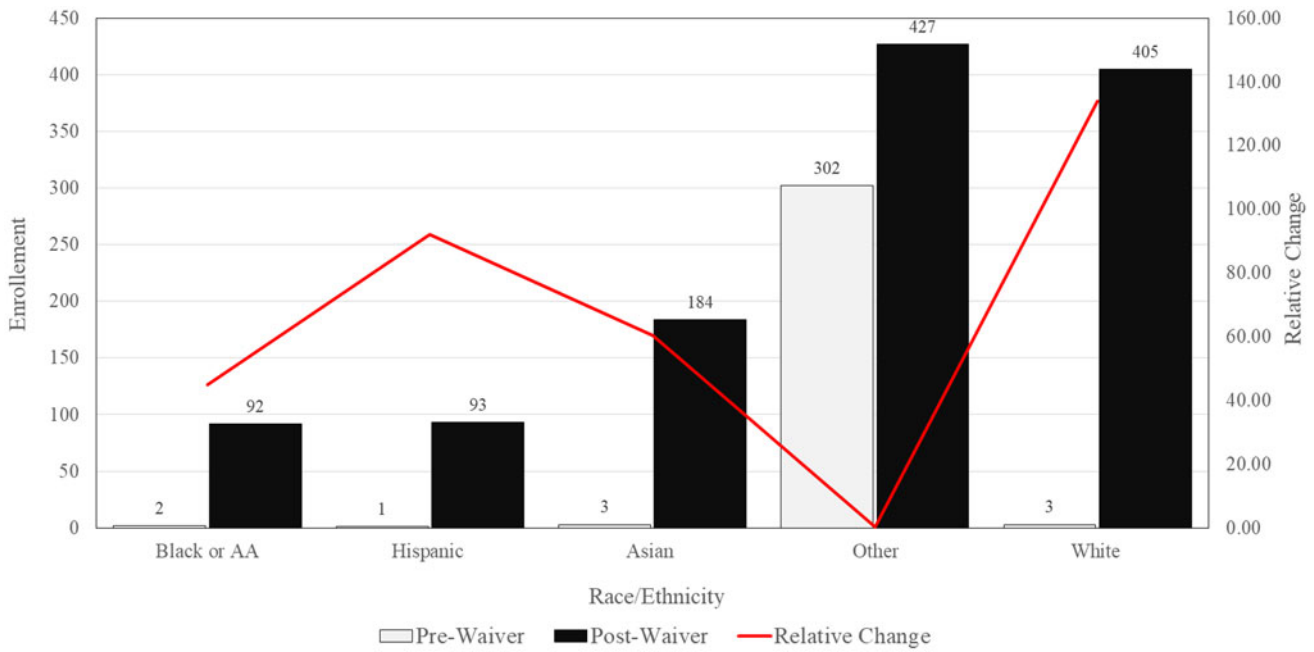


Figure 5. University sponsored insurance, undergraduates: changes by race/ethnicity.

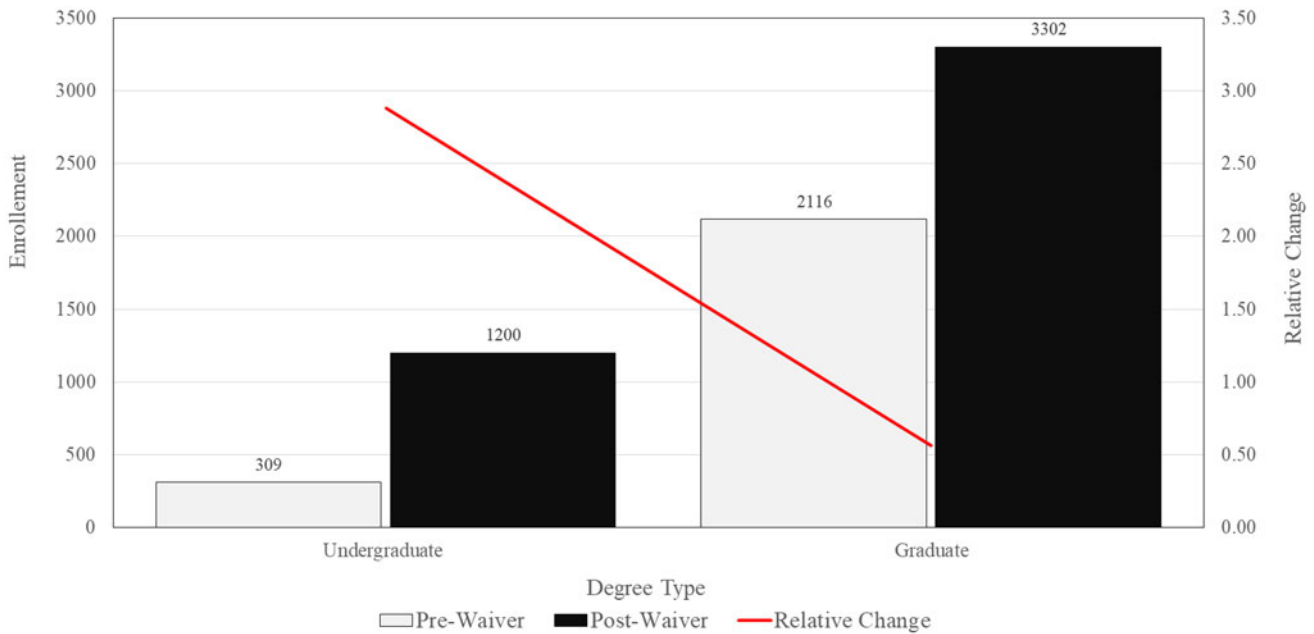


Figure 6. University sponsored insurance: changes by education level.

graduate to undergraduate, and tax-independent to tax-dependent on having university-sponsored insurance. It is noteworthy to point out that despite the drastic changes in the university-sponsored insurance by race, that education level and tax dependency status were still stronger predictors of insurance type than race.

Comment

The university-sponsored insurance population did have a greater representation of minority students than White

Table 2. Determinants of insurance type.

Independent variables	Odds ratio	95% Confidence interval	Wald Chi Sq	p Value
Ethnicity	2.5	2.3–2.7	460.7	<.001
Education level	6.7	6.1–7.4	1531.3	<.001
Tax dependency	4.2	3.8–4.6	853.1	<.001

students, though the difference was not large. Specifically, 53% or just a little over half of that population were minority students. However, this difference appears larger when observing that minority students were just 38% of the waived population group. Furthermore, the relative changes in this insurance group pre and postwaiver indicate that

overall Hispanic, Asian, and Black students were the most affected by the hard-waiver program.

While these increases in the purchasing of student health insurance among minority populations was in line with our a priori expectations, indicating a potential lack of insurance prior to the hard-waiver program, we also found that undergraduate students from the White population were greatly affected as well. If low-income status is associated with a reduced likelihood of having health insurance, then a reasonable assumption could be made that many students from the adjoining rural areas of the state contributed to this increase.¹⁰

Beyond race, it is notable to point out that the university-sponsored insurance group was still comprised mostly of graduate students and tax-independent students. This is likely because many undergraduate students are still financially dependent on their parents. Therefore, it makes sense that generally, older and independent graduate students were more likely, even prior to the hard-waiver program, to either elect to enroll in the university plan or had specific stipends supporting enrollment in university insurance. This pattern of behavior explains why although there were absolute increases in enrollment in these subgroups after the hard-waiver program, they were not as drastic compared to their undergraduate and tax-dependent counterparts.

Finally, it was interesting that just 2% of the waived insurance group represented out-of-state students. This trend not only reflects the smaller portion of out-of-state students overall at the university, but perhaps that out-of-state students with their own insurance plan failed to meet comparable coverage requirements due to preferred network requirements.

In the future, the results of this study could be expanded to include utilization data from healthcare providers across the surrounding areas of the university in order to determine how insurance type affects utilization of services. For example, one study found that after the ACA, young adults had significantly higher rates of receiving a routine examination, blood pressure screening, cholesterol screening, and annual dental visit but not an influenza vaccination.¹¹ Similarly, one study looking at the effects of Medicaid Expansion in Kentucky found that expansion was associated with significant increases in outpatient utilization, preventive care, and improved health care quality.¹² It would certainly be interesting to see what types of services increased or decreased among students following implementation of the hard-waiver program.

In addition, emergency department utilization could also be looked at pre and postwaiver to determine if having more insured students reduced admissions to the emergency department. For example, one study on the impact of Medicaid Expansion in Maryland on emergency department high utilizers found that although the proportion of high utilizers decreased significantly after expansion, some types of emergency department visits were unaffected.¹³ It would be interesting to see what kind of gaps, if any, remain at the university level. Finally, a comparison of benefits in regards to premiums, deductibles, and other major plan elements

among the waived insurance group would be key in order to assess how much of the waived insurance group had plans that were better, worse, or equal to the university-sponsored plan.

Limitations

Study findings should also be interpreted in conjunction with limitations. The findings are specific to the student population of a single public university, which may not be generalizable to other universities. As with any observational dataset, the data are susceptible to issues of incompleteness, miscoding, and a limited ability for verification.

Conclusion

Considering the near twofold enrollment increase in university-sponsored insurance, education about health insurance regarding costs, and access and utilization of healthcare services should be widely promoted with an emphasis on undergraduates, and minorities overall. These populations may have little to no prior experience with obtaining health coverage. One study at a major public university found that the majority of students, especially undergraduates, have limited direct experience with health insurance and deficits in health insurance comprehension. For example, 51% of students were confused about using or selecting health insurance and 24% reported delaying or going without medical care because of confusion about health insurance.¹⁴

Likewise, Chen et al. found that the probability of having any physician visit was lower for minority groups compared to Whites, and that the probability of forgoing any necessary care was higher among Blacks and Latinos compared to Whites.¹⁵ These findings highlight the notion that simply increasing the number of insured does not always lead to improved access and utilization. Future steps should therefore be taken by the university to identify remaining barriers in order to ensure not only health insurance compliance, but also to ensure enhanced access and utilization as well. In examining student healthcare needs, attitudes, and behaviors for instance, Delene et al. suggest a number of recommendations including promoting programs and services that better address student healthcare concerns, developing aggressive promotion messages, and considering joint inter-institutional development of healthcare advertising, to name a few.¹⁶

Finally, plan benefits should reflect the newly added health profiles of the younger undergraduate population. Universities should consider potentially expanding plan options to more than just one type to reflect the different health needs of the larger and more diverse university-sponsored insurance group. This includes being mindful of the economic status of their majority tax-independent graduate enrollees and developing strategies or working with the federal or state government to reduce cost of coverage through premium subsidies.

Conflict of interest disclosure

No potential conflict of interest was reported by the authors.

Funding

No funding was used to support this research and/or the preparation of the manuscript.

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