



Assessing equity in social and health services eligibility among PK-12 students in Washington State



Education Research and Data Center

Forecasting and Research

Office of Financial Management

January 2024

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About the ERDC

This study used data from the Education Research and Data Center in the Washington Office of Financial Management. ERDC works with partner agencies to conduct powerful analyses of learning that can help inform the decision-making of Washington legislators, parents, and education providers. ERDC's data system is a statewide longitudinal data system that includes de-identified data about people's preschool, educational, and workforce experiences. In Fiscal Year 2019, ERDC was awarded a five-year Statewide Longitudinal Data System (SLDS) Grant, which involves using our data system to examine educational equity issues in Washington's public educational systems. ERDC is one of 28 grantees across the country who are participating in the FY19 SLDS Grant Program.

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Executive summary

This report examines whether equity exists among PK-12 student populations in Washington state regarding eligibility for social and health services through the Children's Health Insurance Program (CHIP) from Medicaid and Temporary Assistance for Needy Families (TANF) programs. CHIP provides health coverage to eligible children, while TANF delivers cash assistance to low-income households. Data limitations prevented analysis of other social and health service programs such as the Supplemental Nutrition Assistance Program (SNAP). For the assessment, the report used data from the Education Research and Data Center (ERDC) to identify students eligible for CHIP or whose families qualify for TANF among the PK-12 grade students in Washington public schools enrolled between the 2011/12-2019/20 school sessions.

Previous studies in the education/equity literature have examined equity along the stratification of demographic composition, such as gender and race/ethnicity composition, among others because a lack of equity in education is rooted in the differences across these indicators. As a result, this study examines equity regarding eligibility for health and social services using these demographic indicators among public school students in Washington State.

The equity literature defines equity based on the proportional representation of the population using demographic indicators such as gender, age, race/ethnicity, etc. As a result, this report examines equity by comparing the percentage of students (based on gender and race-ethnicity composition) eligible for CHIP-Medicaid or whose families qualify for TANF relative to students of the same group from low-income households. In this context, the report employs the proportionality index because it has become a value-laden metric that implies equity/inequity in the literature.

Key findings:

Equity in CHIP-Medicaid services:

1. Results show that the percentage of male or female students eligible for CHIP-Medicaid services is proportionally equal to those of male or female students from low-income households, thus indicating equitable representation among male and female students.
2. In addition, the percentage of white and Hispanic students eligible for CHIP Medicaid is proportionally equal to that of students of the same racial

composition from low-income households, thus supporting equitable representation among white and Hispanic students.

3. Also, the percentage of Asian students eligible for CHIP-Medicaid is greater than that of Asian students from low-income households, which supports equity among Asian students.
4. Contrary to the previous results, the percentage of Black, Native Hawaiian, and American Indian students eligible for CHIP Medicaid is lower than that of students of the same racial composition from low-income households, which suggests inequity among Black, Native Hawaiian, and American Indian students regarding eligibility for CHIP-Medicaid services.

Equity in TANF services:

1. The results show that the percentage of male or female students whose families qualify for TANF is proportionally equal to that of male or female students from low-income households, thus indicating equity among male and female students.
2. Furthermore, the percentage of Asian and Hispanic students whose families qualify for TANF is smaller than that of students of the same racial composition from low-income households, indicating inequity among Asian and Hispanic students.
3. The percentage of Black, American Indian, and two/more races students whose families qualify for TANF is greater than that of students of the same racial composition from low-income households, which suggests that equity among Black, American Indian, and two/more races students exist regard eligibility for TANF services.
4. The percentage of Native Hawaiian and white students whose families qualify for TANF is proportionally equal to that of students of the same racial composition from low-income households, indicating equitable representation among Native Hawaiian and White students.

Background information

A range of state and federal-funded social safety net programs are administered at the county and state levels to help families address household challenges in the United States over time. These programs often cover health care, food assistance, disability care, energy and utility subsidies, cash assistance, education and childcare assistance, and housing subsidies.

In education, social programs, such as the National School Lunch Program (NSLP) and School Breakfast Program (SBP), can be delivered directly to students at school or on campus. Others are made available to families through outside agencies to address economic inequality, which includes Medicaid, which offers health coverage; Temporary Assistance for Needy Families (TANF), which provides cash assistance; Supplemental Nutrition Assistance Program (SNAP), which addresses food and nutrition insecurity; and Special Supplemental nutrition program for women, infants, and children (WIC), which protects the health of low-income children under age five at nutrition risk among others. In addition, the Children's Health Insurance Program (CHIP) provides health coverage to eligible children through the Medicaid program.

Lack of educational equity has led to a persistent opportunity gap, increasing gaps in enrollment in higher education and employment across student sub-populations over the years (Gillborn and Youdell, 2000). Educational inequity exists when every student does not receive the required resources or support equitably to acquire the essential reading, writing, and arithmetic skills due to differences in race and ethnicity, income level, disability, gender, primary language spoken, etc. (Dorn et al., 2020). The resources or support could be food and nutrition security, health and social services, or educational resources. As also noted by Taylor et al. (2023), the inequalities created by socioeconomic segregation have implications for educational equity. This makes the analysis of educational equity a prevalent topic in education research.

This report examines whether equity or inequity exists among public school students eligible for CHIP Medicaid services and students whose families qualify for TANF services in Washington state. Literature on equity defines equity based on the proportion of the population relative to a reference population (Royal and Flammer 2015). As a result, the report examines equity by comparing the gender and race-ethnicity composition of students eligible for CHIP-Medicaid or students whose families qualify for TANF services relative to students of the same group from

low-income households using the proportionality index (for further details on the proportionality index, see Bollmer et al., 2007; Rolock 2011).¹

The proportionality index is computed by dividing the percentage of students of a specific composition eligible for CHIP-Medicaid services or whose families qualify for TANF services by the percentage of students of the same composition from low-income households (Wurtz 2017). This shows whether the representation of a given subgroup (e.g., students eligible for CHIP or students whose families qualify for TANF) by gender and race-ethnic groups reflects the same composition across a reference population (e.g., students from low-income households). Because the proportionality index has become a value-laden metric that implies equity/inequity in the literature (Dettlaff et al., 2011), primarily, a PI score of 1.0 and above reflects proportional and over-representation, taken as evidence of equity (see Bollmer et al., 2007; Rolock, 2011; Royal and Flammers 2015). Conversely, a score less than 1 indicates underrepresentation or disproportional representation and proof of inequity (see Bollmer et al., 2007; Rolock, 2011; Royal and Flammers, 2015).

Despite this recommendation, Sosa (2017) argued that there is no universally agreed benchmark for interpreting proportionality index. For example, Bensimon and Malcolm-Piqueux (2012) recommended using values equal to or less than 0.85 to identify disproportionate or underrepresentation instances. Royal and Flammer (2015) and Sosa (2017) used similar recommendations in their studies. Other studies have used 0.99 or less as a basis to identify cases of disproportionate representation (see Cummings et al., 2021). Wurtz (2017) considered a PI ratio of 0.90 or less as evidence of disproportionate representation. But for all intents and purposes, the present study uses a PI value of 0.95-1.05 as evidence of proportionate or equitable representation relative to the reference population (i.e., low-income households). In contrast, a value less than 0.95 indicates underrepresentation or disproportionate representation, while over 1.05 is evidence of overrepresentation relative to the reference population.

¹ Table A of the appendix provides detail description of gender and race/ethnicity groups taken as equity indicator

Data sources, description, and data analysis

Due to data limitations, this report is limited to the CHIP-Medicaid and TANF programs. Specifically, we used CHIP-Medicaid eligibility data from the Washington State Health Care Authority (HCA) covering students ages 11 years and above and TANF data from the Washington State Department of Social and Health Services (DSHS) covering all ages to identify students eligible for CHIP or students whose families qualify for TANF services. In addition, the report used Washington State's P20W data from the Education Research and Data Center (ERDC) to link the identified students to the PK-12 student population in Washington public schools.

Because the CHIP-Medicaid eligibility data and TANF claim data used for the report are available monthly for each calendar year, the data used for the analysis is limited to those who are consistently eligible to receive the service or whose families qualify to receive the services through the year. In other words, the final sample contains only those eligible to receive the service 12 months a year. Finally, we merged this reduced sample with Washington State's P20W data from the ERDC to further identify students eligible to use CHIP services or whose families qualify to receive TANF services among the student population in the state for each school year covering 2011/12-2018/19 for CHIP-Medicaid and 2011/12-2019/20 for TANF. However, because the CHIP-Medicaid data covers students ages 11 years and upward, which generally translates to grades 6 and above, we limit the P20W data to grades 6-12 before merging it with the Medicaid data provided by the HCA.

This process identified 449,156 students eligible for CHIP Medicaid services covering 2011/12-2018/19 school sessions. Since the same students are expected to be repeated across years as they appear in different grades, the data used for the analysis contains 1,490,831 student records, mainly from middle and high schools (grades 6-12). The report also comprises 62,076 students whose families qualify for TANF services covering the 2011/12-2018/19 school sessions. Similar to the CHIP data, the same students are expected to be repeated across years since they appear at different grades; the data used for the analysis contains 179,512 student records covering grades PK-12.

What did we learn from the data?

Equity in CHIP-Medicaid services

Before discussing whether equity exists amongst students eligible to receive CHIP-Medicaid services, it is important to mention that our data contains students eligible to receive CHIP services funded by the federal government and state-funded CHIP services known as Washington Apple Health for Kids. State-funded CHIP supports families who do not qualify to receive federal Medicaid services. The eligibility for federal Medicaid services is based on citizenship and immigration status, household composition, and income relative to the federal poverty levels. For example, children with household incomes up to 312% of the federal poverty level are eligible for CHIP.² The eligibility for state-funded CHIP depends on whether the family's income is below the Medicaid standard income requirement of up to 312% of the federal poverty level.³

Equity by Gender

Table 1 provides insights into how eligibility for CHIP-Medicaid -including federal and state-funded services — varies across genders, which is vital to understanding whether gender equity exists in eligibility for CHIP-Medicaid services among grades 6-12 students in Washington public schools. Using the proportionality index, we relate this to the gender composition of students from low-income households in Washington public schools.⁴ The table shows that the percentage of male students eligible for CHIP services is slightly less than the percentage of male students from low-income families. In contrast, the percentage of female students eligible to receive CHIP-Medicaid services is slightly higher than the percentage of female students from low-income households.

² See for details: <https://www.healthinsurance.org/medicaid/washington/>

³ See for details: <https://www.hca.wa.gov/free-or-low-cost-health-care/i-need-medical-dental-or-vision-care/children>

⁴ Students from low-income households are proxied by the eligibility for free and reduced-price meals (FRPM) programs, where students from families with income at or below 130% of the federal poverty level (FPL) are eligible for free meals under the National School Lunch Program, and students from families with incomes between 130% and 185% of FPL are eligible for reduced price meals (for details see Taylor et al., 2023).

Since the proportionality index has become a value-laden term that implies equity/inequity in the literature (Dettlaff et al., 2011), we find that the percentage of male students eligible for the services is proportionately equal to that of male students from low-income households, which supports equitable representation among male students. Also, the proportionality index shows that the percentage of female students is proportionately similar to that of female students from low-income families, which indicates equity in eligibility for CHIP Medicaid services among female students.

Table 1: Gender Distribution of students eligible for CHIP and students from low-income households

Gender	CHIP-Medicaid Eligible (%)	Low-income Household (%)	Proportionality Index
Male	50.2	51.9	0.97
Female	49.8	48.1	1.04

Note: Low-income households estimates are based on all FRPM recipients in Washington public school grades 6-12 regardless of whether they received the program in focus from 2011/2012-2018/19 school sessions. Figures are percentages.

Equity by racial and ethnic groups

Table 2 presents the racial and ethnic composition of students eligible for CHIP-Medicaid services in Washington public schools covering the 2011/12-2018/19 academic sessions. The table shows that White students account for the largest percentage (42%) of the students eligible for CHIP Medicaid services, followed by Hispanic students (36%). In comparison, about 6% of students eligible for CHIP Medicaid are Black or Asian. Also, about 2% of students eligible for CHIP Medicaid services are American Indian or Native Hawaiian. In addition, about 7% of students eligible for CHIP Medicaid services have two or more races.

However, using the proportionality index, which compares the racial-ethnic composition of students eligible for CHIP-Medicaid services with that of students from low-income households, we find mixed results regarding equity in eligibility for the services along the race and ethnicity stratification. For example, the percentage of Hispanic, Asian, and White students eligible for CHIP-Medicaid benefits is higher or about equal to the percentage of students in low-income households who are Hispanic, Asian, and white students, respectively. In contrast, the percentage of Black, American Indian, Native Hawaiian, and two or more races students eligible for CHIP-Medicaid benefits is lower than that of students of the same composition in low-

income households. These results show inequity in eligibility for CHIP-Medicaid services among Black, American Indian, Native Hawaiian, and two or more races students. On the other hand, White and Hispanic students are proportionately represented regarding eligibility for CHIP-Medicaid services, while the Asian population is overrepresented. The result is consistent with the findings of Sealy-Jefferson et al. (2015), where the authors argued that racial and ethnic minority groups tend to have lower rates of health services use compared with white individuals, suggesting other factors related to culture, language, and discrimination may be at play.

Table 2: Racial/Ethnic Distribution of students eligible for CHIP and students from low-income households

Race-Ethnic Group	CHIP-Medicaid Eligible (%)	Low-income Household (%)	Proportionality Index
American Indian	2.1	2.3	0.91
Asian	6.0	4.8	1.25
Black or African-American	6.1	7.1	0.86
Hispanic or Latino	35.5	35.1	1.01
Native Hawaiian	1.5	1.8	0.83
White	42.3	41.3	1.02
Two or more races	6.5	7.6	0.86

Note: Low-income households estimates are based on all eligible for FRPM in Washington public school grades 6-12 regardless of whether they receive the program in focus from 2011/12-2018/19 school years. Figures are percentages.

Temporary Assistance for Needy Families (TANF)

The qualification for receiving TANF services is based on citizenship and immigration status, household composition, resources, and income. For example, a household of three must have earned an income under \$15, 696 to qualify for the program.⁵

⁵ See for details: <https://www.dshs.wa.gov/esa/community-services-offices/tanf-and-support-services> and <https://app.leg.wa.gov/WAC/default.aspx?cite=388-400-0005>

Equity by Gender

The results show that about 49.6% of students whose families qualify for TANF are male, and 50.4% are female in Washington public schools, as shown in Table 3. However, comparing this with the gender group across low-income households using the proportionality index, the study found evidence supporting equitable representation among female and male students whose families qualify for the services. This is because the percentage of male or female students whose families qualify for TANF is proportionally equal to that of male or female students from low-income households.

Table 3: Gender Distribution of students whose families qualify for TANF and students from low-income households

Gender	TANF (%)	Low-income Household (%)	Proportionality Index
Male	50.4	51.9	0.97
Female	49.6	48.1	1.03

Note: Low-income households estimates are based on all recipients of FRPM in Washington public school grade PK-12 regardless of whether they receive the program in focus from 2011/12-2019/20 school years.

Equity by Race/Ethnic groups

The racial and ethnic composition of students whose families qualify for TANF services is presented in Table 4. We compare this with the racial and ethnic composition of students from low-income households in Washington public schools. Based on the proportionality index shown in the table, the percentage of Native Hawaiian and White students whose families qualify for TANF is proportionally equal to that of students of the same racial composition from low-income households. Also, the percentage of American Indian, Black, and two or more races students is greater than that of students of the same racial composition from low-income households. In contrast, the percentage of Asian and Hispanic students whose families qualify for TANF is proportionally less than that of students of the same racial composition from low-income households.

The implication is that Asian and Hispanic students are disproportionately represented relative to the same racial composition from low-income households, thus indicating a lack of equitable representation of Asian and Hispanic students among those whose families qualify for TANF. However, White and Native Hawaiian students were found to be equitably represented among

students whose families qualify for TANF. In contrast, students from Black, American Indian, and two or more race families were over-represented among those whose families qualify for TANF services, indicating an equitable representation of these racial compositions.

Table 4: Racial/Ethnic Distribution of students whose families qualify for TANF and students from low-income households

Race-Ethnic Group	TANF (%)	Low-income Household (%)	Proportionality Index
American Indian	3.0	2.3	1.30
Asian	2.1	4.8	0.44
Black or African-American	12.9	7.1	1.82
Hispanic or Latino	26.7	35.1	0.75
Native Hawaiian	1.9	1.8	1.03
White	40.9	41.3	1.05
Two or more races	10.6	7.6	1.39

Note: Low-income households estimates are based on all recipients of FRPM in Washington public school grade PK-12 regardless of whether they receive the program in focus from 2011/12-2019/20 school sessions.

Concluding Remarks

The analysis shows equitable representation among male and female students eligible for CHIP-Medicaid services. We also find an equitable representation of male and female students whose families qualify for TANF. So, there is no evidence of gender bias among eligible students for CHIP-Medicaid and students whose families qualify for TANF services.

Our results also show that regarding the eligibility for CHIP-Medicaid services, Native Hawaiian, two or more races, Black, and American Indian students are underrepresented, eligible Asian students are overrepresented, and Hispanic and white students are proportionally or equitably represented.

Finally, among students whose families qualify for TANF, Asians and Hispanics are underrepresented. At the same time, Whites and Native Hawaiians are equitably represented, and American Indians, Blacks, or two/more races are overrepresented.

One of the limitations of this report is the lack of income data to identify students based on socioeconomic status (SES) used for the comparison population. While students from low-income households are proxied by the eligibility for free and reduced-price meals (FRPM) programs in the report, we recognize the limitations of the FRPM data as a measure of household socioeconomic status (SES) including the inability to differentiate between certain income thresholds used for eligibility for specific income-based programs such as TANF and Medicaid. Nevertheless, we believe using FRPM data is valid to determine the distribution of SES students at the school level when computing the school funding formula in more than half of U.S. states (31 states) and is well documented in the literature (see for details: Snyder et al., 2018).

Future Research

As a follow-up to this descriptive analysis, future research will provide context on whether eligibility for these services disproportionately impacts educational outcomes (e.g., high school graduation, test scores) among low-income households in Washington public schools. Specifically, we will employ a quasi-experiment design by focusing on students eligible for free and reduced-price meals (FRPM) taken as a proxy for low-income households to identify treatment and control groups, which is vital to investigate whether CHIP-Medicaid eligibility and TANF services make a difference in the educational outcomes by race/ethnicity and gender across student populations in Washington.

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Appendix: Equity Indicators

Table A: Description of gender and race/ethnicity groups used as equity indicators derived from the characteristics of the students

Indicators	Description
Gender	Students self-identify as Male or Female
Race/ethnicity groups	American Indian- Students having origins in any of the original people of North and South America (including Central America) and who maintain tribal affiliation or community
	Asian- Students having origin in any of the original people of the Far East, Southeast Asia, or the indicant subcontinent.
	Black- Students having origins in any of the black racial groups of Africa.
	Hispanic/Latino- Students self-identify as Hispanic, Latino, or Spanish originating.
	Native Hawaiian or other Pacific islands- Students having origins in any of the original people of Hawaii, Guam, Samoa, <u>or</u> other Pacific islands
	Two or more races- Students who identify with more than one race
	White- Students having origins in any of the original people of Europe, the Middle East, <u>or</u> North Africa