



December 15, 2020

**PREVENTION, EARLY IDENTIFICATION  
AND INTERVENTION**

A Youth-defined and School-based Leadership Development Project



## **PREVENTION, EARLY IDENTIFICATION AND INTERVENTION**

A Youth-defined and School-based Leadership Development Project

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## ACKNOWLEDGMENTS

Words alone cannot express our gratitude to the students and advisors across all 230 chapters in California. We are most appreciative to the multitude of students and advisors who participated and those who continue to participate in Cal-HOSA's mental health prevention and early intervention projects and for sharing their valuable time, experience, and insights with us. We are forever grateful for their willingness to share their perspectives and their continued leadership in advancing HOSA's mission and vision.

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## EXECUTIVE SUMMARY

Cal-HOSA: Future Health Professionals is a student-led organization for middle and high school students interested in learning more about health and mental/behavioral health. In 2018, Cal-HOSA launched its mental health prevention and early intervention project for educators. This project is a mental/behavioral healthcare framework to address the risk factors associated with health and mental/behavioral health issues, and suicide ideation among youths and young adults. Students who participated in Cal-HOSA during the 2019–20 school year were surveyed to answer four research questions related to Cal-HOSA and the mental health prevention and early intervention project.

### What types of students are participating in Cal-HOSA’s mental health and wellness project?

- The majority of the Cal-HOSA students who responded to the survey were in high school, and 50% joined Cal-HOSA when they were in the 9<sup>th</sup> grade
- 78% of survey respondents were female
- Nearly half of the survey respondents were Latino/Hispanic, and one-quarter were Asian

### What are the post-high school plans for students who are participating in Cal-HOSA’s mental health and wellness project?

- 97% of the survey respondents were interested in pursuing a bachelor’s degree or higher
- 53% of survey respondents were interested in pursuing a professional degree, such as an M.D. or a Ph.D.
- 86% of survey respondents were planning on pursuing a career in healthcare or mental/behavioral healthcare

- 33% of survey respondents indicated they were interested in pursuing at least one job related to behavioral health, such as psychologist or psychiatric nurse

### What prevention and early identification activities are Cal-HOSA students participating in?

- 24% of survey respondents reported participating in 11 or more hours of mental health and wellness activities for Cal-HOSA
- 64% of survey respondents reported participating “in discussions about mental health with [their] peers” at least “once or twice a month”
- 31% of survey respondents indicated they “led activities that increase awareness about mental health stigma on [their] school campus” at least “once or twice a month”

### To what extent did Cal-HOSA students report improvements in efficacy, resilience, and school and community engagement since they joined the organization?

- The survey respondents reported large improvements in their efficacy, resilience, school engagement, and community engagement since joining Cal-HOSA
- For example, 27% of survey respondents “strongly agreed” that they “had a good sense of what makes [their] life meaningful” before they joined Cal-HOSA, and the percentage climbed to 50% when they were asked how they felt after having been members of Cal-HOSA

# Cal-HOSA: A SCHOOL-BASED PREVENTION, EARLY IDENTIFICATION, AND INTERVENTION MODEL

Cal-HOSA: Future Health Professionals is a student-led organization for middle and high school students interested in learning more about health and mental/behavioral health. Cal-HOSA has nearly 11,000 members and 230 chapters throughout California. Cal-HOSA is a “health science and medical technology curriculum strategy that is part of an instructional program that prepares students for healthcare careers” (Cal-HOSA, 2020). More information about Cal-HOSA is available on the organization’s website (<https://www.cal-hosa.org/>).

In 2018, Cal-HOSA launched its mental health prevention and early intervention project for educators. This project is a mental/behavioral healthcare framework to address the risk factors associated with health and mental/behavioral health issues, and suicide ideation among youths and young adults (see Exhibit 1).

In promoting diversity and using a strength-based approach to improve mental well-being, two program goals are essential: (1) increase students’ and educators’ training in the early identification of mental health issues and prevention of suicidal thinking, and (2) increase the number and diversity of students entering the mental/behavioral health fields. Students follow a program of study starting in middle school with general information about careers, followed by hands-on and experiential learning activities in high school, and the opportunity to complete a post-secondary career technical education certificate.

When key components of the Cal-HOSA model are integrated into the school and classroom environment, students have reported experiencing a sense of inclusion and having a place where they feel connected. That is, being a member of Cal-HOSA means feeling recognized as a strength and asset to a community. Anecdotally, students who are members of Cal-HOSA consistently report:

- Having a sense of purpose that leads to positive relationships and trusting bonds with caring peers and adults to overcome adversities

- Advocating, supporting, and serving others, and creating hope for those who feel excluded and hopeless
- Using lived and life experiences of resilience to recognize and build upon personal strengths and assets, and connect through storytelling
- Experiencing a sense of identity that creates a community and safe spaces for those who feel disengaged from school and community life
- Feeling empowered wearing “HOSA blues” with a call to action to pursue a helping career and feel like “I Can Make A Difference” (ICMAD)
- Finding a meaningful role in their school and community life that builds self-efficacy and finding joy in making a difference to overcome self-doubt

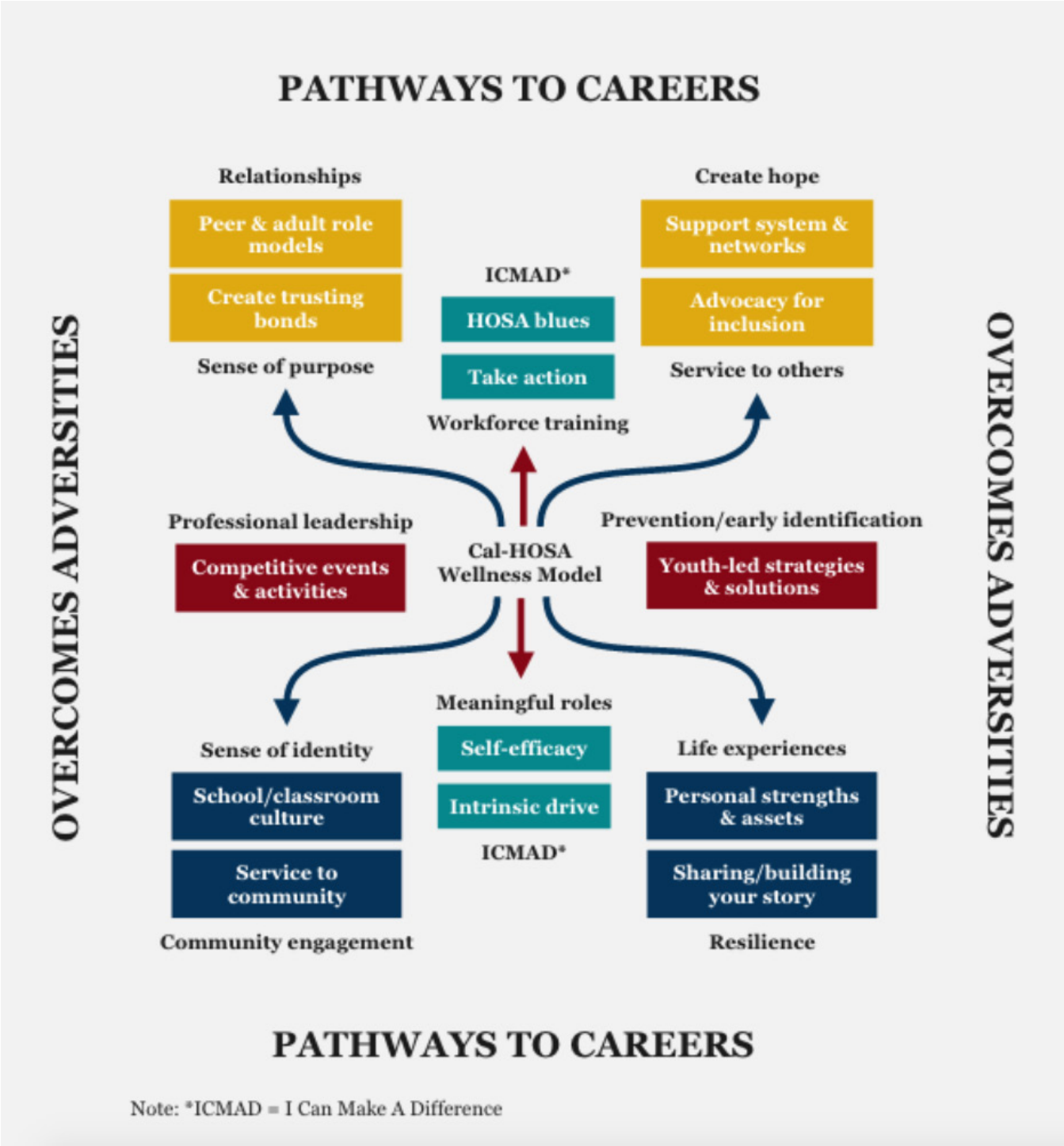
Cal-HOSA serves as a protective factor for students looking to belong to a community that is inclusive and accepting of diverse backgrounds. When students become fully immersed in HOSA activities, they make meaningful connections with their peers and caring adults. They also discover purpose, personal strengths, and assets that help them build resilience and confidence in achieving their goals, even when facing adversity, which improves their overall well-being. Cal-HOSA is also an emerging health and mental/behavioral health care workforce strategy to expand career education for students.

Furthermore, students who participate in Cal-HOSA establish a collaborative environment that increases students’ capacity and productivity that result in successes. For example, Cal-HOSA’s competitive events and activities help students demonstrate their leadership capabilities, teamwork, and interpersonal and communication skills.

When students participate in Cal-HOSA, they are more likely to:

- Increase their academic engagement and their intrinsic motivation toward achieving their school goals

Exhibit 1. Cal-HOSA Prevention, Early Identification and Intervention Model



- Demonstrate confidence in their abilities to take on new challenges, and when the results are unfavorable, learn from them and find value in the experience
- Engage in positive thinking in their outlook on life and commitment to serving their community
- Connect to human networks and promote pathways to wellness, reduce mental health stigma, and promote social inclusion
- Find joy in learning about mental well-being and advocate for others

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## Research Questions

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To our knowledge, there has been no prior systematic research into the Cal-HOSA program or the participating students. As a result, we aimed to conduct a preliminary study that could generate

initial findings about Cal-HOSA that would lay the foundation for future studies. We surveyed students who participated in Cal-HOSA during the 2019–20 school year to answer the following four research questions:

- What types of students are participating in Cal-HOSA's mental health and wellness project?
- What are the post-high school plans for students who are participating in Cal-HOSA's mental health and wellness project?
- What prevention and early identification activities are Cal-HOSA students participating in?
- To what extent did Cal-HOSA students report improvements in efficacy, resilience, school engagement, and community engagement since they joined the organization?



## METHOD

We developed an online survey for middle and high school students participating in Cal-HOSA. We sent the survey URL to teachers at 15 schools in the spring of 2020, and the teachers, in turn, distributed the URL to the Cal-HOSA students at their schools. To address the four research questions, we analyzed the survey data using descriptive techniques.

### Survey Content

Piloting of the survey questions with a convenience sample enabled subsequent refinement of the questions (Cusack, Desha, Del Mar, & Hoffman, 2017). The first section of the survey included a range of closed-ended demographic questions. These questions asked what school the Cal-HOSA students attended as well as the students' gender, race/ethnicity, current grade level, grade level when they joined Cal-HOSA, and knowledge of mental health when they joined Cal-HOSA.

The next set of questions dealt with the students' post-high school plans. The questions in this section asked about the academic degrees the students were interested in pursuing, and whether they were thinking of pursuing a career in healthcare or mental/behavioral health. Students who indicated they were planning on a career in healthcare or mental/behavioral health were asked which of 14 jobs (e.g., Athletic Trainer/Sports Medicine and Dentist) they were interested in pursuing.

The third section included a range of questions that related to the prevention and early identification activities in which Cal-HOSA students were participating. The questions asked whether the respondents were Cal-HOSA peer youth leaders/mentors and how many hours they completed for Cal-HOSA's mental health and wellness activities. The survey also included seven items (e.g., "How often did you participate in discussions about mental health with your peers?") that assessed how often the students participated in various Cal-HOSA activities using a 1 (*never*) to 6 (*nearly every day*) scale. These seven items showed excellent reliability (Cronbach's  $\alpha = .89$ ). Three of the questions asked about Cal-

HOSA activities for youth leaders (e.g., "How often did you lead activities that increase awareness about mental health stigma on your school campus?") using a 1 (*never*) to 6 (*nearly every day*) scale. These three items showed good reliability (Cronbach's  $\alpha = .85$ ). Additionally, this section of the survey asked the students to identify which of five places (e.g., home and school) they talked to people or groups about mental health topics. Finally, the section included three questions that asked, for example, "How effective have you been at increasing awareness about mental health issues?" using a 1 (*not at all effective*) to 4 (*very effective*) scale. The effectiveness rating scale also had a "not sure" response option, and students who selected "not sure" were excluded from the analysis.

The fourth section of the survey included 28 questions that employed a *retrospective pre-post design* (Moore & Tananis, 2009) that asked students to rate their level of agreement with statements based on how they felt "before joining Cal-HOSA" and "now (after having been in) Cal-HOSA." The goal of these questions was to efficiently assess the potential impact of Cal-HOSA on several mental health and wellness project domains (i.e., efficacy, resilience, school engagement, and community engagement) using a single survey administered after the students had participated in Cal-HOSA. All of the statements were rated using a 1 (*strongly disagree*) to 4 (*strongly agree*) scale. The survey included 14 pre-test questions (i.e., before joining Cal-HOSA), and 14 parallel post-test questions (i.e., after joining Cal-HOSA). Within each set of 14 questions, six questions were related to efficacy and resilience (e.g., "You [had/have] a good sense of what makes your life meaningful."), and eight questions were related to school and community engagement (e.g., "You [had/have] a lot to offer to your school community"). The students first rated how they felt "before joining Cal-HOSA," and on the following page of the online survey the students rated how they felt after joining Cal-HOSA. The six efficacy and resilience items and the eight school and community engagement items showed good to excellent reliability for the retrospective pre-test and the post-test (Cronbach's alphas ranged from .85 to .92).

## Survey Administration and Number of Respondents

The survey was administered online using Qualtrics. During March to June of 2020, the research team sent the survey URL to teachers at 15 schools participating in Cal-HOSA and asked them to distribute the URL to their students. It was during this time that the participating public schools were closed for in-person instruction due to the COVID-19 pandemic.

A total of 607 students at 13 schools responded to the survey and completed the question asking which school they attended, as well as at least two or more demographic questions. The students responded to the survey between March 31, 2020, and June 22, 2020. The breakdown of the 607 students across the schools with respondents is included in Exhibit 2. The final question on the survey had 451 respondents. The length of the survey and the fact that students were taking the survey from home likely contributed to the high rate of students only partially completing the survey (i.e., 26%).

The response rates varied across the schools. At some of the schools, it is likely that nearly all of the Cal-HOSA students completed the survey. However, in other schools, it's likely that only 10%–20% of the Cal-HOSA students completed the survey. The exact number of Cal-HOSA students at each school was not available to the research team, which prevented the calculation of exact response rates with and across the participating schools. However, we estimate that the response rate was approximately 40%.

## Analysis and Reporting

For the current study, we relied primarily on descriptive analytic techniques (e.g., the calculation of frequencies and means). For the analysis of the retrospective pre-post items, we used paired sample *t* tests to determine whether the differences were statistically significant. Additionally, we calculated effect sizes (i.e., a standardized way to measure change across time or

**Exhibit 2. Number of Students that Responded to the Survey, by School**

School Name	Number of Students
Andrew P. Hill High School	24
Glen View High School	8
Dinuba High School	124
Los Altos High School	18
Manteca High School	18
Oxford Academy High School	94
Oxford Academy Middle School	15
Palmdale High School	109
Palmdale Prep Junior High School	22
Sato Academy	41
Southwest High School	64
Valencia High School	51
Washington Union High School	19
<b>Total</b>	<b>607</b>

the impact of a program; Hill et al., 2008) with the retrospective pre-post items to help determine the size of the potential impact of Cal-HOSA. When creating the graphs in the Findings section, we followed Evergreen's (2020) recommendations for effective data visualizations.

Given the ability of the students who completed even just a few demographic questions to contribute to the findings and the lack of clear drop off in the completion of items (i.e., there was no clear point where the majority of students stopped completing the survey), we opted to include all 607 respondents in the analysis. For the descriptive analyses that relied on single items (e.g., gender), we used a casewise deletion approach and included all respondents with data for each of the items. For the analyses that were based on two or more items (e.g., the paired sample *t* tests), we used a pairwise deletion approach that included respondents that had data for all of the items that were part of each analysis.

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## Limitations

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This study has several important limitations that should be noted. First, although we were not able to calculate an exact response rate for the survey, it was likely around 40%. The students who completed the survey may not be representative of all Cal-HOSA students. Additionally, the students completed the

survey while their schools were closed for in-person instruction, and this may have affected how students responded to the survey. Finally, the retrospective pre-post design is a much less rigorous research design than other non-experimental designs that use a comparison group of students and rely on surveys administered at multiple time points (Shadish et al., 2020).

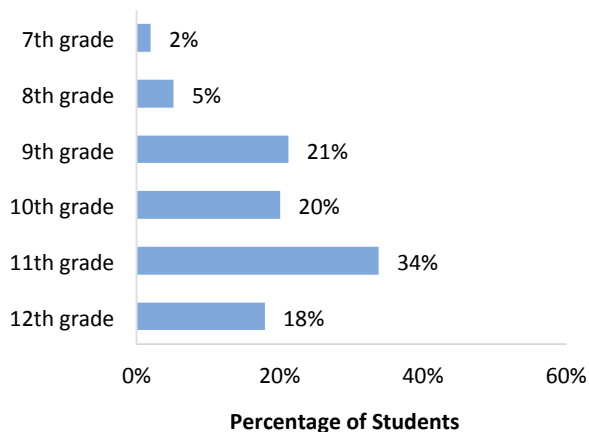
## FINDINGS

### What types of students are participating in Cal-HOSA's mental health and wellness project?

The majority of the Cal-HOSA students who responded to the survey were in high school and joined Cal-HOSA when they were in the 9<sup>th</sup> grade. The survey respondents were predominately female and were racially/ethnically diverse. Additionally, the survey respondents reported moderate knowledge about the topic of mental health when they joined Cal-HOSA.

As shown in Exhibit 3, the vast majority of the survey respondents were in high school at the time they completed the survey in the spring of 2020. One of the initial study goals was to focus on 11<sup>th</sup> graders to ensure continuity of the mental health and wellness project as they transitioned to the 12<sup>th</sup> grade. In general, the numbers of Cal-HOSA students in middle school are small, and only two middle schools participated in this study.

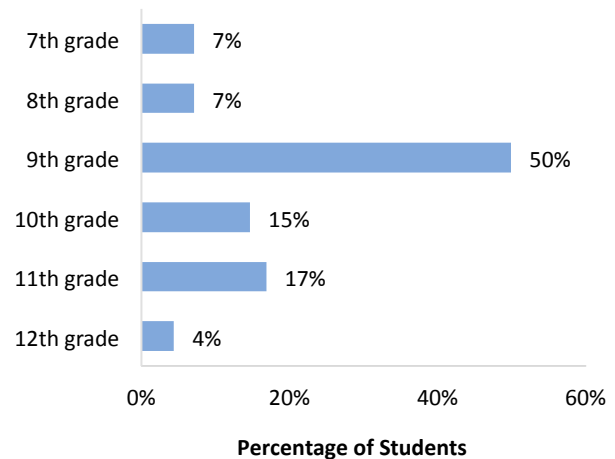
**Exhibit 3. Cal-HOSA Students' Current Grade Level**



Consistent with the structure of Cal-HOSA at most schools where students join at the start of high school, half of all survey respondents reported they joined Cal-HOSA in the 9<sup>th</sup> grade (see Exhibit 4). However, just over one-third of the students indicated they joined Cal-HOSA after 9<sup>th</sup> grade, indicating the schools allow for flexibility in joining the program.

Additionally, students are frequently allowed to stop participating in Cal-HOSA if they, for example, do not have time during a sports season and can rejoin the organization at a later time. Finally, 14% of the students reported they joined Cal-HOSA in middle school.

**Exhibit 4. Students' Grade Level When They Joined Cal-HOSA**



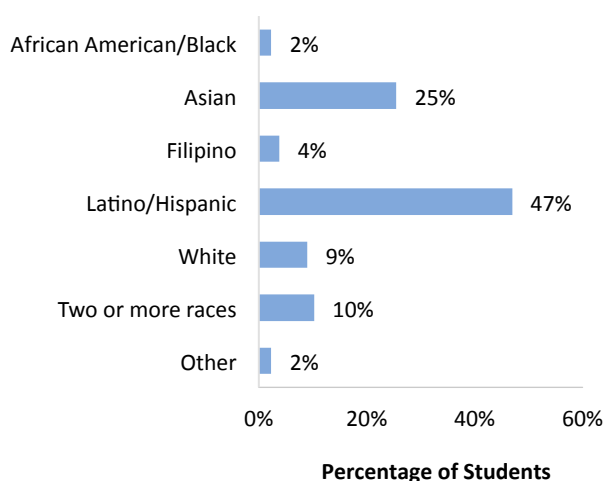
The majority of the survey respondents were female:

- 78% of Cal-HOSA students were female
- 20% of Cal-HOSA students were male
- 2% of Cal-HOSA students declined to respond or preferred to self-describe their gender

The gender distribution of the survey respondents is consistent with recent research showing that an estimated 67% of the healthcare workforce in 104 countries across the world were females (Boniol et al., 2019). Similarly, research on students enrolled in public two-year colleges showed that 83% of students enrolled in health science programs were female (U.S. Department of Education, 2020).

As shown in Exhibit 5, nearly half of the survey respondents were Latino/Hispanic, and one-quarter were Asian. Students who reported they were two or more races and White students each represented approximately 10% of the Cal-HOSA students. There were smaller numbers of Filipino and African American/Black survey respondents.

## Exhibit 5. Race/Ethnicity of Cal-HOSA Students



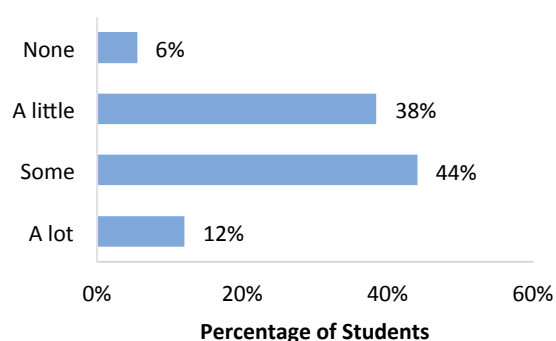
Based on California Department of Education (CDE) data from 2019–20, Asian American students represented the largest ethnic group in the Cal-HOSA chapters from the study’s participating schools, with Latino/Hispanic and African American/Black students showing smaller numbers. The percentage of White students who participated in Cal-HOSA in the schools included in the study was consistent with the percentage of White students at the schools. Specifically, the racial/ethnic breakdown in 2019–20 of the 13 schools with survey respondents was 68% Latino/Hispanic, 12% Asian, 11% White, and 5% African American/Black (CDE, 2020). However, these findings should be viewed with caution, because the different response rates across the 13 schools and the different sizes of the participating schools could be driving the pattern of findings. Further research based on extant data or schools’ reporting of the race/ethnicity of all their Cal-HOSA students would allow for much stronger conclusions to be drawn about the over or underrepresentation of specific racial/ethnic groups in Cal-HOSA.

Finally, the vast majority of the survey respondents reported knowing “a little” or “some” about the topic of mental health before they joined Cal-HOSA (see Exhibit 6). Many of the students who join Cal-HOSA may have an existing interest in the topic of mental health. Other students may have some knowledge of the topic because of their own experience with mental health issues, or they may have known family or friends

who have experienced mental health conditions. Importantly, Cal-HOSA provides students an opportunity to discuss and learn about a topic that is frequently avoided due to the stigma associated with it.

*...the vast majority of the survey respondents reported knowing “a little” or “some” about the topic of mental health before they joined Cal-HOSA*

## Exhibit 6. Students’ Reported Knowledge about Mental Health Before they Joined Cal-HOSA



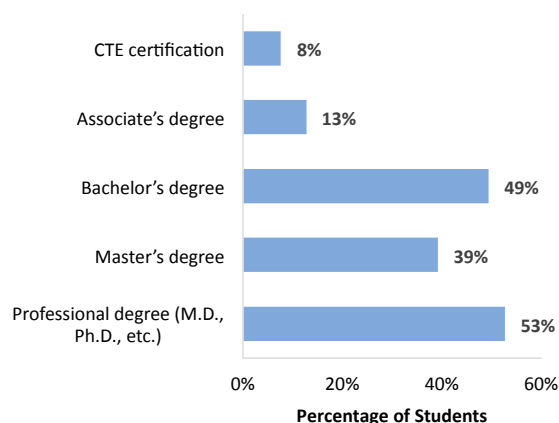
## What are the post-high school plans for students who are participating in Cal-HOSA’s mental health and wellness project?

The Cal-HOSA students who completed the survey reported having high academic goals. A total of 97% of the students were interested in pursuing a bachelor’s degree or higher. As shown in Exhibit 7, nearly half of the students reported they were interested in pursuing a bachelor’s degree, and 53% were interested in pursuing a professional degree, such as an M.D. or a Ph.D.

*53% were interested in pursuing a professional degree, such as an M.D. or a Ph.D.*



## Exhibit 7. Academic Degrees Cal-HOSA Students Are Interested in Pursuing



In fact, more and more studies indicate higher academic aspirations (Chestnut & Tran-Johnson, 2013; Martínez-Monteaudo et al., 2018) and college and career readiness (Ohlson, 2019) by students in student-led leadership programs.

Consistent with the goals of Cal-HOSA, the survey respondents were particularly interested in careers in healthcare:

- 86% of students were planning on pursuing a career in healthcare or mental/behavioral healthcare

In contrast, nationally representative survey data has shown that only 23% of 15-year-olds in the U.S. expected to have a career in a health field (Hall & Rathbun, 2020). The specific healthcare and mental/behavioral health jobs the survey respondents were interested in pursuing are included in Exhibit 8. On average, the students selected 2.3 jobs ( $SD = 1.6$ ) they were interested in. Not surprisingly, the two most popular jobs were physician/doctor and nurse. The next most frequently identified jobs were psychologist, EMT or paramedic, and pharmacist.

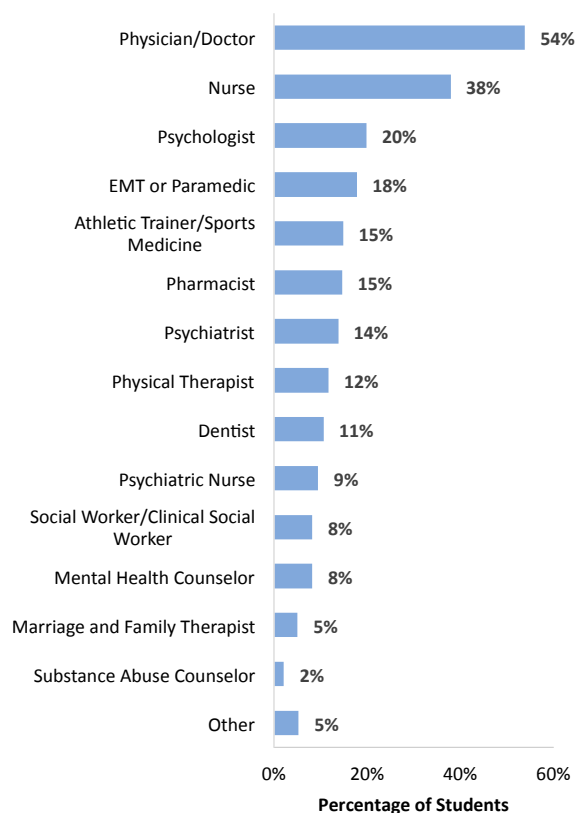
**86% of students were planning on pursuing a career in healthcare or mental/behavioral healthcare**

One-third of the students indicated they were interested in pursuing at least one job related to behavioral health. The behavioral health jobs included psychologist, psychiatrist, psychiatric nurse,

social worker, mental health counselor, marriage and family therapist, and substance abuse counselor. This is an important finding because it is possible that as students are learning about risk factors associated with mental health issues, they are also discovering a career path and the value that they may bring with their personal lived experiences.

**One-third of the students indicated they were interested in pursuing at least one job related to behavioral health.**

## Exhibit 8. Healthcare and Mental/Behavioral Healthcare Jobs Cal-HOSA Students Are Interested in Pursuing

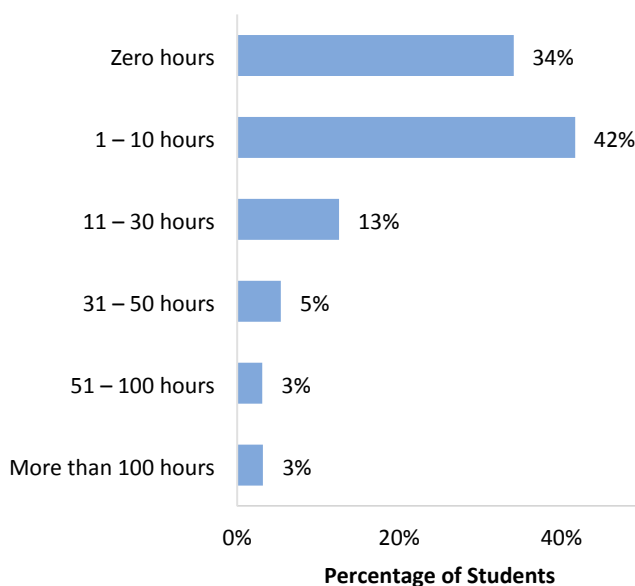


**What prevention and early identification activities are Cal-HOSA students participating in?**

The majority of the survey respondents reported participating in a range of prevention and early identification activities as part of Cal-HOSA. These prevention and early intervention activities are designed to build youth mental health leaders or ambassadors who will facilitate peer-to-peer sessions, but also play a meaningful role in serving their communities and increasing health literacy.

As shown in Exhibit 9, 42% of students reported that they participated in 1 to 10 hours of mental health and wellness activities for Cal-HOSA. An additional 24% of students reported participating in 11 or more hours of activities. It should be noted that all of the schools were closed for in-person activities in March due to COVID-19, and many students would have likely been able to complete additional hours if the schools had been open for in-person instruction throughout the whole school year. The schools provided students with different types of opportunities, and the number of opportunities varied across schools as well. At Southwest High School, for example, Cal-HOSA students setup booths at football games, distributed information, and talked to parents and students about mental health. The students at Southwest High School also could enroll in a community class for engaging in activities with parents and in their neighborhoods.

**Exhibit 9. Number of Hours Students Completed for Cal-HOSA’s Mental Health and Wellness Activities**



In addition to the activities for regular Cal-HOSA members, students can also become a youth leader/mentor. The survey data showed that:

- 17% of students were Cal-HOSA youth leaders/mentors

The goal for each Cal-HOSA school was to select 10 leaders who would help train other students. Some of the leaders were trained to be ambassadors, who worked alongside their Cal-HOSA advisors to reduce stigma and lead peer-to-peer conversations about mental wellness. Some of these students were trained in Mental Health First Aid (MHFA). MHFA is an evidence-based training to support someone exposed to risk factors associated with mental health issues.

As shown in Exhibit 10, the majority of the students reported participating in a number of prevention and early intervention activities. The most commonly reported activity was taking part “in discussions about mental health with [their] peers,” which 64% of students reported engaging in at least “once or twice a month.” Additionally, 47% of students reported participating in “school activities to reduce mental health stigma at least “once or twice a month,” and 45% of students indicated they took part a peer-to-peer network to share experiences at least “once or twice a month.”

*The most commonly reported activity was taking part “in discussions about mental health with [their] peers,” which 64% of students reported engaging in at least “once or twice a month.”*

The students reported participating in the leadership activities presented in Exhibit 11 less frequently than the prevention and early intervention activities shown in Exhibit 10. For example, 31% of the students reported that they “led activities that increase awareness about mental health stigma on [their] school campus” at least “once or twice a month.” The students’ responses indicated that “post[ing] on social

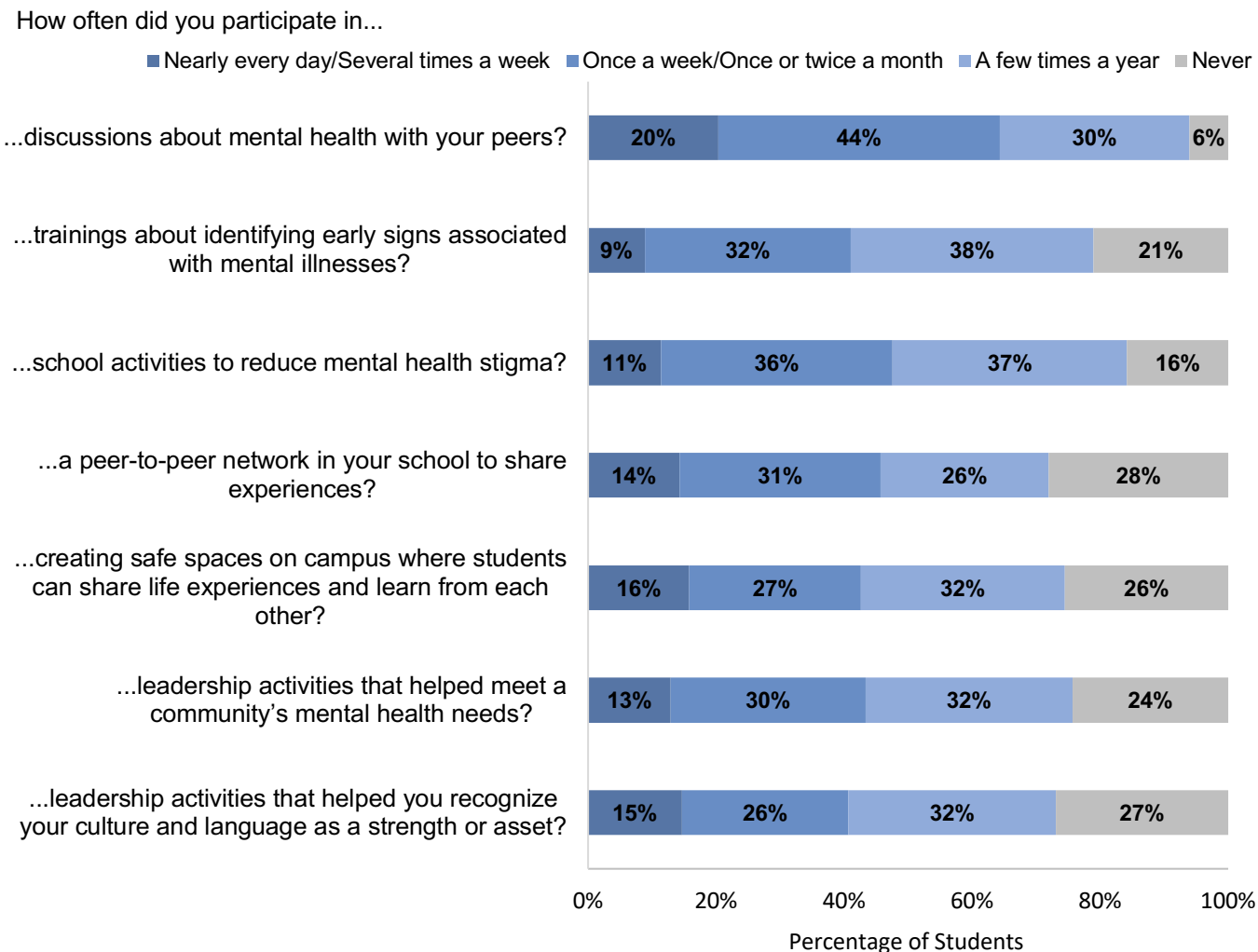
media to promote mental health and wellness” was the most frequent leadership activity they engaged in.

The students reported talking with others about mental health topics primarily at their schools and at home (see Exhibit 12). Smaller numbers of students reported talking about these topics at middle schools or other high schools, at community fairs and social/cultural events, and in their neighborhoods. At Manteca High School, for example, juniors went to middle schools to do presentations on mental health topics and what to do when exposed to toxic stress.

Other high schools provided similar opportunities for their students to present at local middle schools.

The vast majority of students felt they were at least “somewhat effective” at “increasing awareness about mental health issues” (see Exhibit 13). Additionally, between 43% and 50% of the students felt they were “effective” or “very effective” at increasing awareness, “increasing others’ understanding of risk factors associated with mental health issues,” and “engaging other students in discussions about mental health and wellness.”

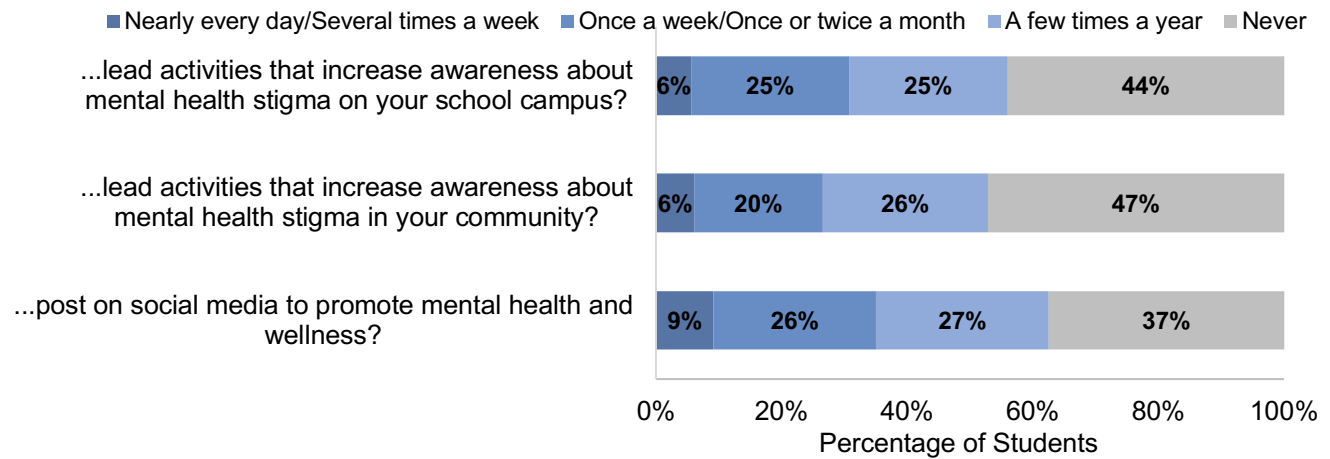
### Exhibit 10. Frequency of Participation in Cal-HOSA Prevention and Early Intervention Activities





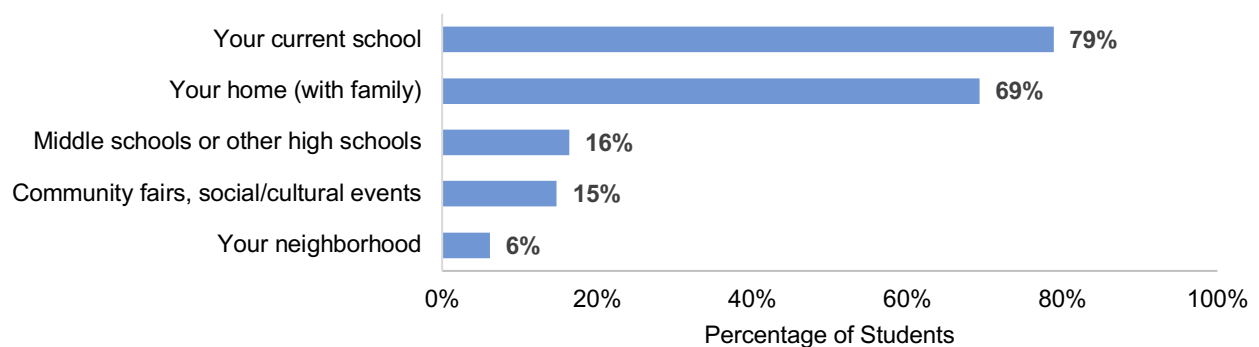
## Exhibit 11. Frequency of Participation in Cal-HOSA Leadership Activities

During this school year, how often did you...



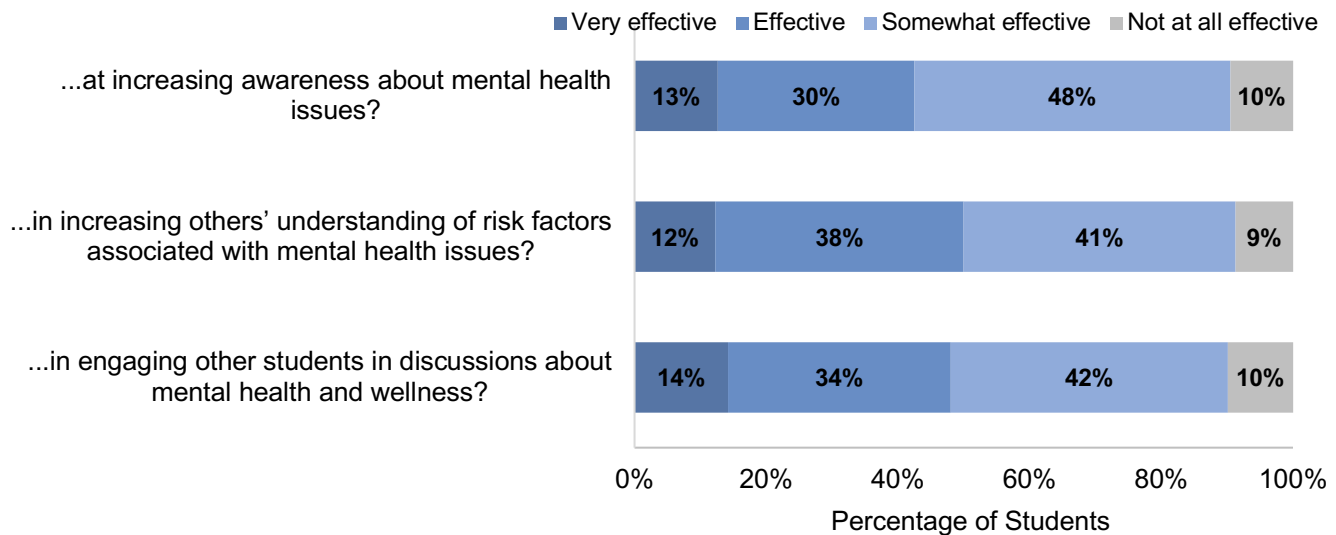
## Exhibit 12. Places Students Talked with Others About Mental Health Topics

During this school year, what places did you talk to people or groups about mental health topics?



### Exhibit 13. Effectiveness at Increasing Awareness of Mental Health Issues

During this school year, how effective have you been...



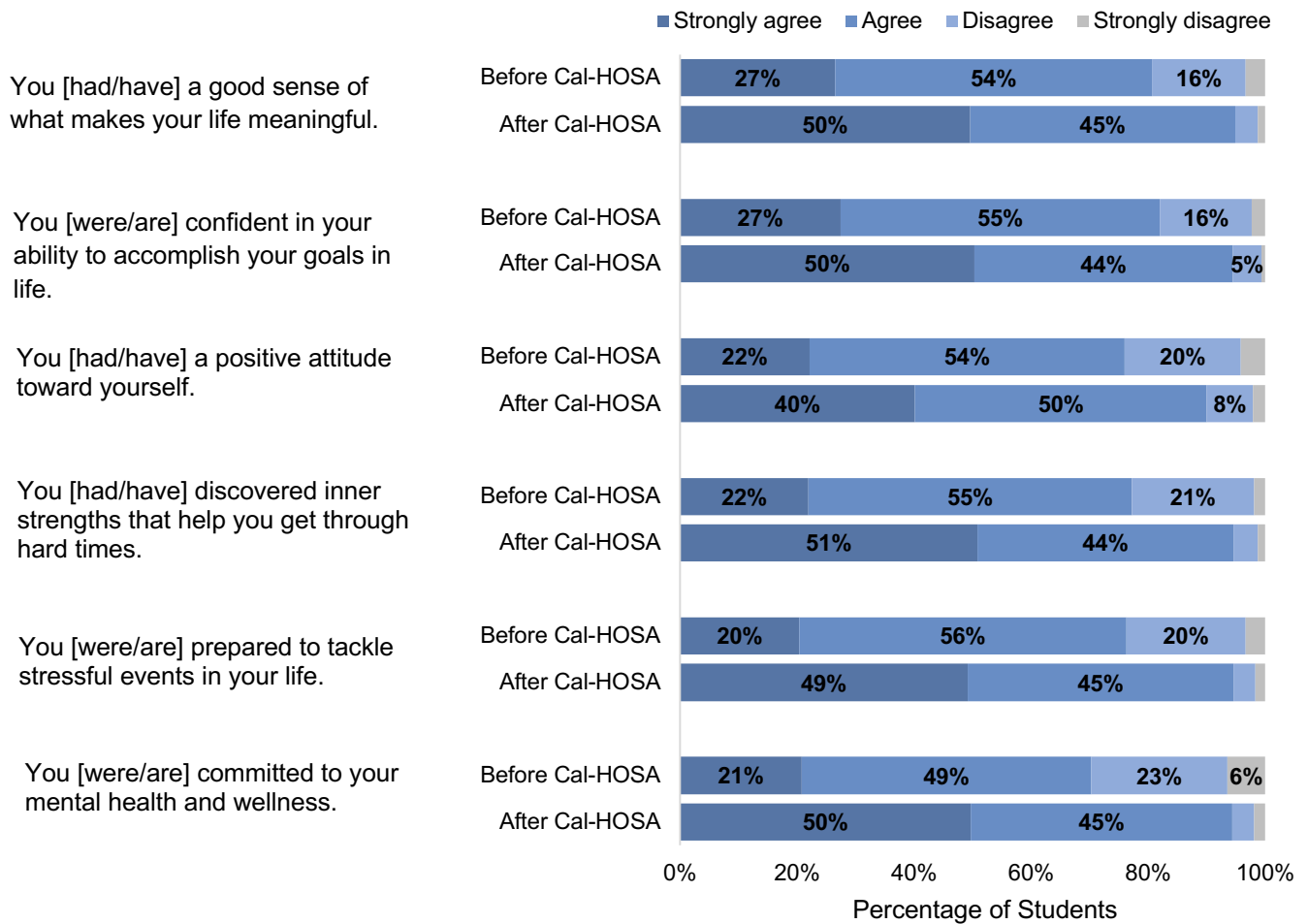
#### To what extent did Cal-HOSA students report improvements in efficacy, resilience, and school and community engagement since they joined the organization?

The students reported large improvements in their efficacy and resilience since joining Cal-HOSA (see Exhibit 14). For example, 27% of students “strongly agreed” that they “had a good sense of what makes [their] life meaningful” before they joined Cal-HOSA, and the percentage who “strongly agreed” climbed to 50% when they were asked how they felt after having been in Cal-HOSA. Similarly, sizable improvements were shown for other items assessing efficacy and resilience that asked about having “a positive attitude toward yourself,” “discovering inner strengths,” and “being prepared to tackle stressful events.” As shown in the Appendix, the differences between the students’ responses before and after Cal-HOSA for the efficacy and resilience items were all statistically significant. Although these findings are based only on survey

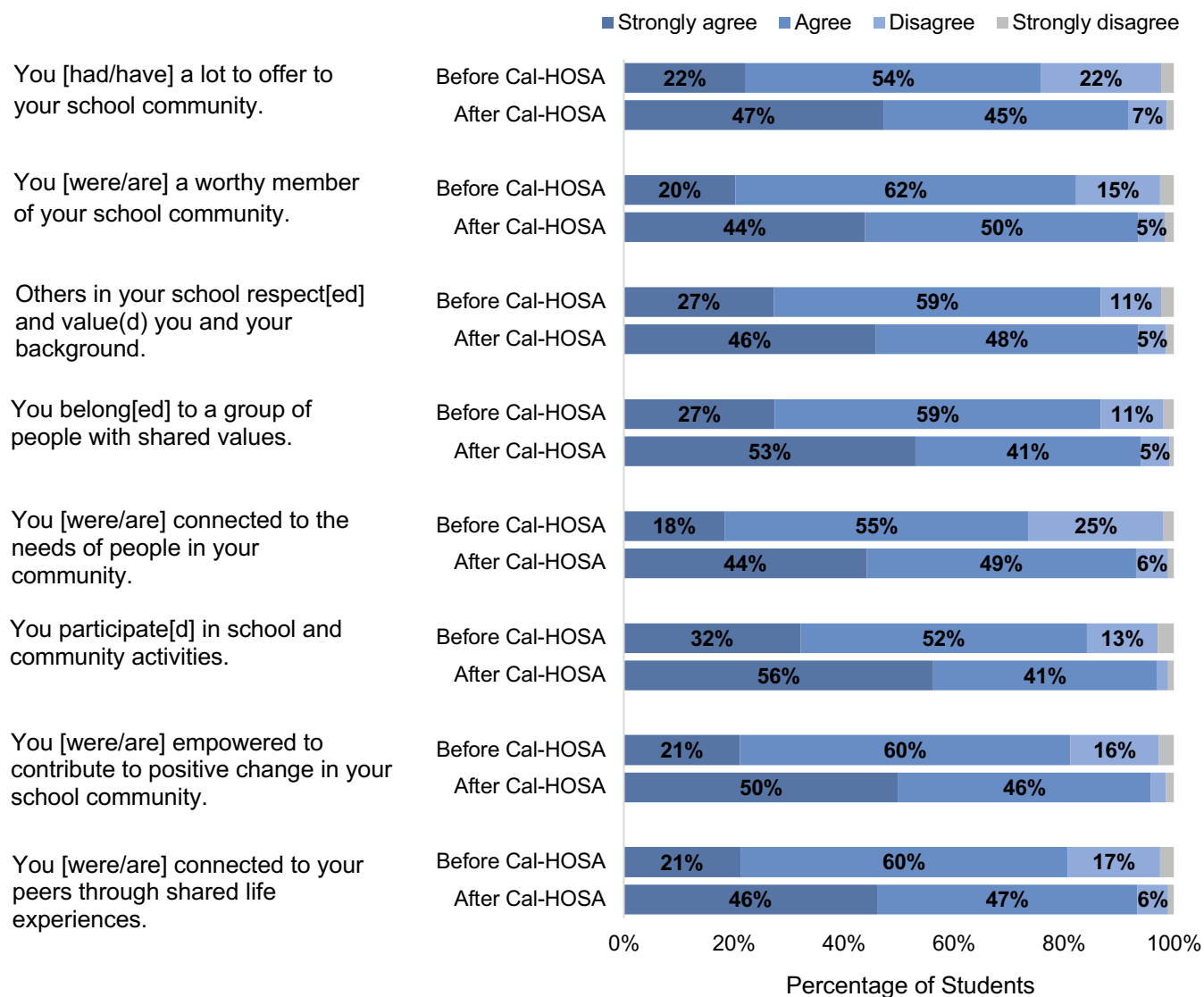
data collected at one time point, they suggest that the students’ experiences in Cal-HOSA could be having a positive influence on their efficacy and resilience.

The students also reported large improvements in their school and community engagement since joining Cal-HOSA. As shown in Exhibit 15, 22% of students “strongly agreed” that they “had a lot to offer their school community” before they joined Cal-HOSA, and the percentage who “strongly agreed” increased to 47% when they were asked how they felt after having been in Cal-HOSA. There were similar improvements for the other items assessing school and community engagement. These items addressed a range of topics, including feeling “connected to the needs of people in [their] community” and “empowered to contribute to positive change in [their] school community.” Consistent with the efficacy and resilience items, the differences between the students’ responses before and after Cal-HOSA for the school and community engagement items were all statistically significant (see Appendix). Although suggestive, the findings indicate that the students’ experiences in Cal-HOSA could be having a positive influence on their school and community engagement.

## Exhibit 14. Students Reports of Efficacy and Resilience Before and After Joining Cal-HOSA



## Exhibit 15. Students' Reports of School and Community Engagement Before and After Joining Cal-HOSA



## CONCLUSIONS AND RECOMMENDATIONS

In this report we sought to make several major points. First, Cal-HOSA promotes safe and supportive learning environments, and facilitates meaningful student-to-student and student-to-teacher connections. Second, Cal-HOSA creates leadership opportunities for youths to engage in and find a purpose, and to be of service to others. Third, Cal-HOSA students engage in real-life experiential learning activities that increase their self-efficacy and career readiness. Fourth, when students are faced with life stressors and anxieties that can push them deeper into psychological distress, Cal-HOSA provides a culture of wellness and support that changes students' life trajectories from self-debilitating thinking and behaviors to a "I Can Make a Difference" attitude and taking action to create change.

The Cal-HOSA wellness model provides students with a support structure that allows them to discover their inner strengths and assets to overcome school and life challenges. Cal-HOSA fosters resilience in students allowing them to be aware of circumstances or conditions that put them at greater risk of mental distress. Accordingly, when students join Cal-HOSA, they become immersed in its culture of helping and demonstrating an ability to self-monitor and recognize the signs and situations that make them more susceptible to stressors and risk factors associated with mental illness.

With these conclusions in mind, we have presented information about Cal-HOSA's wellness model components, and how these components lead students to identify protective factors to overcome challenges and barriers to succeed in school and life in general.

We established the following recommendations to strengthen the Cal-HOSA wellness model as an early prevention and identification strategy:

- Emphasize primary prevention (i.e., tier 1) centered on promoting well-being activities and engaging in preventive behaviors
- Continue to engage students in more discussions about mental wellness in schools and seek their suggestions and recommendations
- Strive for innovative approaches to work with youth leaders in Cal-HOSA to reach other students struggling with isolation due to the COVID-19 pandemic
- Improve partnerships with community-based organizations and county behavioral health departments to coordinate and maximize efforts
- Create a workforce pipeline of emerging wellness youth leaders or ambassadors who are intrinsically motivated and pursuing a career in the mental/behavioral health industry
- Reinforce the importance of inclusivity, safe spaces (on-site or virtually), and storytelling as a strategy to help students recognize their life experiences as strengths and essential elements of their identity, purpose, and life aspirations
- Collect more qualitative information to better determine the impact from the Cal-HOSA wellness model on students' well-being, academic engagement, college and career readiness, and leadership aspirations as a future helping professional

It is also our hope that this report will contribute to the ongoing professional development of educators working closely with students on supporting the mental wellness of all youth and their communities. Additionally, strengthen the Cal-HOSA wellness model followed by a rollout plan in a continuous and effective manner.

## REFERENCES

- Boniol, M., McIsaac, M., Xu, L., Wuliji, T., Diallo, K., & Campbell, J. (2019). *Gender equity in the health workforce: Analysis of 104 countries* (No. WHO/HIS/HWF/Gender/WP1/2019.1). World Health Organization. <https://apps.who.int/iris/bitstream/handle/10665/311314/WHO-HIS-HWF-Gender-WP1-2019.1-eng.pdf>
- Cal-HOSA. (2020, November 12). *California HOSA history*. <https://www.cal-hosa.org/history/>
- California Department of Education. (2020). *Enrollment by school 2019–20* [Data set]. <https://www.cde.ca.gov/ds/sd/sd/filesenr.asp>
- Chesnut, R., & Tran-Johnson, J. (2013). Impact of a student leadership development program. *American Journal of Pharmaceutical Education*, 77(10), 225. <https://doi.org/10.5688/ajpe7710225>
- Cusack, L., Desha, L. N., Del Mar, C. B., & Hoffman, T. C. (2017). A qualitative study exploring high schools' understanding of, and attitudes towards, health information and claims. *Health Expectations*, 20(5), 1163-1171.
- Evergreen, S. D. H. (2020). *Effective data visualization* (2nd ed.) Sage.
- Hall, M., & Rathbun, A. (2020). *Health and STEM career expectations and science literacy achievement of U.S. 15-year-old students* (NCES 2020-034). U.S. Department of Education, Institute of Education Sciences. <https://nces.ed.gov/pubs2020/2020034.pdf>
- Hill, C. J., Bloom, H. S., Black, A. R., & Lipsey, M. W. (2008). Empirical benchmarks for interpreting effect sizes in research. *Child Development Perspectives*, 2(3), 172–177. <https://doi.org/10.1111/j.1750-8606.2008.00061.x>
- Martínez-Monteagudo, M. C., Delgado, B., Sanmartín, R., Inglés, C. J., & García-Fernández, J. M. (2018). Academic goal profiles and learning strategies in adolescence. *Frontiers in Psychology*, 9, 1892. <https://doi.org/10.3389/fpsyg.2018.01892>
- Moore, D., & Tananis, C. A. (2009). Measuring change in a short-term educational program using a retrospective pretest design. *American Journal of Evaluation*, 30(2), 189–202. <https://doi.org/10.1177/1098214009334506>
- Ohlson, M. (2019) Leadership education for college and career readiness: The CAMP Osprey Mentoring Program. *Journal of Community Engagement and Scholarship*: Vol. 11 : Iss. 1 , Article 7. Available at: <https://digitalcommons.northgeorgia.edu/jces/vol11/iss1/7>
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Houghton Mifflin.
- U.S. Department of Education. (2020). *Students in subbaccalaureate health sciences programs: 2015–16* (NCES 2020-055). U.S. Department of Education, Institute of Education Sciences. <https://nces.ed.gov/pubs2020/2020055.pdf>

## APPENDIX

**Exhibit A-1. Mean and Standard Deviations for the Efficacy and Reliance Items and the School and Community Engagement Items Before and After Joining Cal-HOSA**

	Before Joining Cal-HOSA		After Joining Cal-HOSA		n	p value	Effect Size
	Mean	SD	Mean	SD			
Efficacy and Reliance Items							
You [had/have] a good sense of what makes your life meaningful.	3.04	0.75	3.43	0.63	486	< .001	0.62
You [were/are] confident in your ability to accomplish your goals in life.	3.07	0.72	3.44	0.62	485	< .001	0.60
You [had/have] a positive attitude toward yourself.	2.94	0.76	3.28	0.70	483	< .001	0.49
You [had/have] discovered inner strengths that help you get through hard times.	2.97	0.71	3.44	0.64	478	< .001	0.74
You [were/are] prepared to tackle stressful events in your life.	2.93	0.73	3.42	0.65	480	< .001	0.75
You [were/are] committed to your mental health and wellness.	2.85	0.82	3.42	0.66	481	< .001	0.88
School and Community Engagement Items							
You [were/are] a worthy member of your school community.	3.00	0.68	3.36	0.65	482	< .001	0.55
You [had/have] a lot to offer to your school community.	2.96	0.73	3.38	0.67	483	< .001	0.63
Others in your school respect[ed] and value[d] you and your background.	3.12	0.68	3.38	0.65	481	< .001	0.41
You belong[ed] to a group of people with shared values.	3.12	0.67	3.46	0.63	481	< .001	0.54
You [were/are] connected to the needs of people in your community.	2.90	0.70	3.36	0.64	480	< .001	0.72
You participate[d] in school and community activities.	3.13	0.74	3.52	0.60	480	< .001	0.65
You [were/are] empowered to contribute to positive change in your school community.	3.00	0.69	3.44	0.62	479	< .001	0.72
You [were/are] connected to your peers through shared life experiences.	2.99	0.69	3.38	0.64	482	< .001	0.61

Note: The items were rated on a 1 (*strongly disagree*) to 4 (*strongly agree*) scale. The *p* values are based on paired samples *t* tests. The effect sizes were calculated as the difference between the “now” and “before” items divided by the “before” standard deviation.