

The Impact of Adverse Childhood Experiences on the Mental Health Statuses of Students Across Various Ethnic Identities

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Abstract

Adverse Childhood Experiences (ACEs) are linked to an increased risk of health challenges. This study looked at a diverse sample of students at Ohlone College, a community college in the California Bay Area, to 1) analyse the ethnic groups with the highest ACEs scores and 2) examine the relationship between ACEs and indicators of mental health, including depression, substance-use disorders and self-worth. Using a unique approach to study ethnic identity by incorporating more distinguished ethnic groups, rather than broad categories, our survey found that the two ethnic groups with the highest average ACEs scores were the Afghan American (n = 226) and Native American (n = 229). These two communities, along with the Middle Eastern/North African (MENA) American (n = 228) community, were studied. Through comparison, individuals with high ACEs scores were found most likely to also have higher PHQ-9 scores, higher substance-use disorder symptoms and lower self-worth scores. We concluded that the various societal impacts of ethnic-identity groups must be prioritised as an important facet of mental health. If ethnic identity is included as part of early intervention in situations with abuse and neglect (diagnosis and/or prevention), it may greatly reduce the risk of mental illness.

Keywords: ACEs, Adverse Childhood Experiences, Ethnic identity and mental health, depression and ACEs, self-worth and ACEs, substance-use disorder and ACEs

Background

Distinct trends in mental health difficulties can be found within various ethnic-identity communities (Lee and Chen, 2017). One main driver of these trends is [Adverse Childhood Experiences \(ACEs\)](#) faced by individuals from various backgrounds. Understanding and analysing these trends can be crucial for developing better policies at all levels as well as identifying necessary policy and treatment reform with therapy more focused on past trauma. We found that three facts about these ACEs highlighted the importance of this study.

Firstly, ACEs are often undiscovered and untreated, particularly among specific ethnic groups. Secondly, limited studies have looked at distinct ethnic groups, especially minority groups, who have higher ACEs. These few studies demonstrated that ACEs disproportionately affect the well-being of certain ethnic groups due to factors such as culture, financial status and access to resources. Some of the most understudied groups include Middle Eastern/North African (MENA) American, Afghan American and Native American communities. We were unable to find any studies related to the MENA or Afghan communities but found four studies on PubMed considering Native American ACEs and mental health. Thirdly, there remains a smaller base of ACEs research regarding mental health, creating a lack of documentation on the extent of their impacts, especially when considering ethnic identity. Despite this, multiple studies have confirmed that ACEs do have a substantial impact on individuals, both for their physical and mental well-being (Anda *et al.*, 2002;

Assini-Meytin *et al.*, 2021; Crandall *et al.*, 2019; Dube *et al.*, 2001, 2002a, 2002b, 2003; Felitti *et al.*, 1998; Karatekin, 2017; Leza *et al.*, 2021; Merrick *et al.*, 2017; Sahle *et al.*, 2022). A few other studies have looked at specific ethnic groups, especially minority groups, who have faced more of these experiences, on average, as shown below.

Looking at these three ACEs characteristics, we hypothesised that studying ACEs scores could provide insight into how likely members of an ethnic group would be to experience high levels of depression, [substance-use disorder](#) and low levels of self-worth, focusing specifically on the Afghan American, Native American, and Middle Eastern/North African-American communities.

Historically, depression and substance-use disorder have both been associated with lower levels of mental well-being, while higher self-worth has been associated with higher levels of [resilience](#) and flourishing as shown in the studies below.

Adverse Childhood Experiences

With the [CDC-Kaiser ACE Study](#), which ran from 1995 to 1997, the study of ACEs entered a new dimension. The study showed that early adversity has lasting impacts on the physical and mental health of individuals, including increasing the risk of lung disease, liver disease and suicide (Schilling *et al.*, 2007). Subsequently, many researchers like Nadine Burke Harris, the current Surgeon General of California, linked Adverse Childhood Experiences (or ACEs) to various health issues. Although there have been countless studies on ACEs after this initial study, there has been a gap in the literature in studying the impact of ACEs on college students' mental health, especially in regards to ethnic identity. To understand the past research conducted, a literature review was conducted.

Mental health and ACEs

ACEs do impact mental health outcomes across the population, particularly for young adults. Research shows that those who have experienced multiple ACEs are linked with a higher risk of substance-use disorder and depression levels. In a study by Mersky *et al.*, (2013), the researchers concluded that the impacts of ACEs on young adults quickly translate to long-term health concerns. Another study found that ACEs were associated with depressive symptoms, drug abuse and anti-social behaviour (Schilling *et al.*, 2007).

In conjunction, ACEs can lead to lower levels of self-worth in young adults due to a lack of attention from their caregivers (Oshri *et al.*, 2014). In comparison, adolescents with ascending self-worth scores showed positive growth and fewer substance-use disorder symptoms compared to those with descending self-worth. There are clear connections between the level of ACEs experienced and negative mental health outcomes – requiring a better, more nuanced understanding of ACEs.

Resilience and self-worth

Due to the differences in experiencing and responding to ACEs with differing environments, resources and support systems, there are inequities across various social groups (Thoits, 2010). This makes studying ACEs and their impacts more important, especially when considering the path towards creating equity at a systemic level. ACEs also reveal the necessity of resilience, which is the ability of individuals to respond positively to challenges they have faced in the past. Self-esteem or self-worth have long been shown to have

a positive intervening effect on adverse experiences (Marriott *et al.*, 2014). Examining self-worth measures alongside ACEs highlights this aspect of self-worth.

Ethnicity

The current literature around ACEs and ethnicity has several limitations, from the population focus to methods. For example, the CDC-Kaiser study only focused on a mostly White population. In the past decade, ACEs studies have evolved and have thus focused on specific ethnic groups. Some of these groups have been studied previously regarding their ACEs and mental health, such as the African-American population and the Native-American population (Brockie *et al.*, 2015; Mersky *et al.*, 2013; Mignon and Holmes, 2013). Although these are studies focused on minority groups, studies such as these are in the minority themselves and are still not holistic, considering multiple variables that may impact these populations. One of the studies on Native American populations focused on grandparents and their concerns about the impact of their culture and lack of resources on their communities' growing mental health crisis. (Mignon and Holmes, 2013) Another study focused on a specific reservation where they found that many ACEs corresponded to drug use and depressive symptoms, among other impacts. (Brockie *et al.*, 2015) These studies reveal the limited nature of the literature on ethnic groups and ACEs.

Certain ethnic groups have disproportionately higher amounts of ACEs. Despite this, there is a dearth of research focused on ACEs and ethnic groups. These studies have limited generalisability and reveal the lack of literature on diverse ethnic groups as well as the absence of comparisons between ethnic groups to understand the impact of ethnicity itself on ACEs and mental health. Two groups that have been grossly understudied are the Afghan MENA populations in the US (Awad *et al.*, 2019). This is mainly due to them historically having to self-identify as 'White' on surveys. As studies have shown, they are not perceived as 'White' nor do they perceive themselves as 'White'. However, this label has resulted in their data being masked and the issues that they face not coming to light (Awad *et al.*, 2022; Maghbouleh, *et al.*, 2022).

Considering the deep interlocking connections between ACEs, depression and substance-use disorder and, consequently, self-worth and resilience, it is clear that these areas need to be studied more. As we were from a community college where research is not usually done, we were able to survey a subsection of the population that is more diverse and less researched. To address the gaps in the literature, we investigated the impact of ACEs scores on depression, substance-use disorder and self-worth among historically under-researched Afghan American, Native-American and Middle Eastern/North African-American communities of a community college, and we hypothesised that different communities would experience ACEs and mental health struggles differently.

Methods

Study

Data was collected from 15 to 30 April 2021 using an anonymous online-administered survey system. This survey was conducted on the students of Ohlone College, a community college in California.

The original survey (see Appendix 3) had a total of 43 questions revolving around mental health and ethnic identity. Two questions asked for ethnic identity and its specifics, one asked for gender and sexuality specifics, while the other forty-one questions consisted of previously validated survey questions assessing

the following topics: Adverse Childhood Experiences (ACEs), depression, self-worth, substance-use disorder, anxiety, experience during the SARS-COVID-2 pandemic, disabilities, habits and education, self-esteem, perceived stress and suicidal thoughts. But after releasing the survey for about 24 hours, we realised that question 4, which asked about the specifics of respondents' ethnic identities, would be redundant as question 3 asked for ethnic identity in the form of checkboxes. Therefore, we decided to revise the questions and exclude question 4 while clarifying question 3 about ethnic identities even further. We ended up with a 42-question revised survey (see Appendix 4) with a question on ethnic identity, a question on gender and sexuality, and the other 40 questions regarding the previously mentioned topics.

However, for this research, the questions that were focused on were the ACEs, depression, self-worth and substance-use disorder questionnaires. For ACEs, the official CDC-Kaiser Permanente questionnaire was used and all ten questions were included in the survey. (Mueller *et al.*, 2016; Schilling *et al.*, 2007). Regarding depression, the nine official Patient Health Questionnaire-9 (PHQ-9) questions were used. (Kroenke *et al.*, 2001). For substance-use disorder, we utilised questions from National Institute on Drug Abuse (NIDA) Clinical Trials Network The Tobacco, Alcohol, Prescription medications, and other Substance (TAPS) Tool. (McNeely *et al.*, 2016). Self-worth was measured using selective questions from the Rosenberg Self-Esteem Scale (Rosenberg, 1965). (See Appendix 1 and Appendix 2 for a more visual representation of the questions.) These questions were selected by the entire research team based on which were deemed to be the most appropriate.

ACEs are scored with each negative experience adding 1 point to the respondent's score. The number of ACEs determines the score (out of 10 possible points/experiences).

The PHQ-9 questionnaire works in a slightly different format. With the score ranging 0–27, each of the nine questions has four options:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

So, according to the option selected, the score will differ. Similarly, the options from the TAPS questionnaire ('Daily or almost daily', 'Weekly', 'Monthly', 'Less than monthly', and 'Never') give insight into the participants' substance-use habits. Finally, the Rosenberg Scale, like the PHQ-9 questionnaire, uses a method where a number that matches the option selected results in a specific score for each question. A higher score indicates higher self-esteem in individuals.

Since this study served as a way to gather information about diverse ethnic identities that are not primarily discussed, the ethnic identities were detailed in the following way to be clear. These identities were chosen by surveying multiple identity groups across various articles and updating these groups to encompass more diversity. The following identities were:

- White (e.g. German, Irish, English, Italian, Polish, French, etc.)
- Hispanic, Latino or Spanish origin (e.g. Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Colombian, etc.)
- Black or African American (e.g. African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)
- East Asian (e.g. Chinese, Japanese, Korean, Okinawan, Taiwanese, Tibetan)

- Southeast Asian (e.g. Bruneian, Burmese, Cambodian, Filipino, Hmong, Indonesian, Laotian, Malaysian, Mien, Singaporean, Timorese, Thai, Vietnamese)
- South Asian (e.g. Bangladeshi, Bhutanese, Indian, Maldivians, Nepali, Pakistani, Sri Lankan)
- Other Asian (Afghan)
- American Indian or Alaska Native (e.g. Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.)
- Middle Eastern or North African (e.g. Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc.)
- Native Hawaiian or Other Pacific Islander (e.g. Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, etc.)
- Mixed Ethnic Identities
- Some other race, ethnicity or origin

For the question related to ethnic identity, the participants were allowed to self-report the answers by checking the ethnicities that they identified with, checking 'all that apply'. For 'Mixed Ethnic Identities', it is unknown whether participants checked multiple boxes with or without selecting the 'Mixed Ethnic Identities' box as well since the survey site did not keep track of this.

This survey was restricted to only students of Ohlone College and was incentivised. The survey was advertised where the first 200 participants would receive \$5 Amazon gift cards. It was a completely anonymous study where the only optional information that was collected was about the individuals who were interested in the gift cards – these respondents choose to provide their email addresses to receive the gift cards. The service that was used to give out the survey blocked any IP addresses and made the server private so that no information was able to be breached.

Sample

	TOTAL		Other Asian (Afghan)		American Indian or Alaska Native		Middle Eastern and North African	
	n	%	n	%	n	%	n	%
TOTAL								
Male	625	35.27%	38	16.81%	35	15.28%	34	14.91%
Female	647	36.51%	38	16.81%	37	16.16%	40	17.54%
Trans male	107	6.04%	36	15.93%	34	14.85%	31	13.60%
Trans female	86	4.85%	24	10.62%	30	13.10%	24	10.53%
Different identity	96	5.42%	28	12.39%	26	11.35%	24	10.53%
Gender nonconforming	112	6.32%	27	11.95%	38	16.59%	37	16.23%
Prefer not to say	98	5.53%	35	15.49%	29	12.66%	38	16.67%
Other (please explain)	1	0.06%	0	0.00%	0	0.00%	0	0.00%
Total respondents	1772		226		229		228	

Table 1: Demographics table

Table 1 shows the demographics of all the participants in the overall study and then specifically in the samples of 'Other Asian (Afghan)', 'American Indian or Alaska Native (e.g. Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.)', and 'Middle Eastern or North African (e.g. Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc.)'.

Along with the information presented in Table 1, the survey received responses from individuals who identified themselves according to the options listed above. The responses were White (n = 696, 39.28%), Hispanic, Latino or Spanish (n = 362, 20.43%), Black or African American (n = 479, 27.03%), East Asian (n = 310, 17.49%), Southeast Asian (n = 285, 16.08%), South Asian (n = 275, 15.52%), Native Hawaiian or Other Pacific Islander (n = 229, 12.92%), Mixed Ethnic Identities (n = 231, 13.04%), and 'Some other race, ethnicity or origin' (n = 2, 0.11%).

According to Table 1, the transgender population makes up more than 10 per cent of the participants of the survey. This is significantly higher than the expected 0.7 per cent, based on US national data of 18- to 24-year-olds (World Population Review, n.d.). Multiple factors may have contributed to this over-representation. Since Ohlone College is located in the San Francisco Bay Area, which is extremely diverse, there may be a higher amount of trans-identifying students (An Equity Profile of the Nine-County San Francisco Bay Area Region, 2017). Continually, since underserved minorities tend to attend community colleges, more individuals from the trans-identifying minority community may be attending Ohlone. Lastly, due to the anonymous nature of the survey, where participants may feel more comfortable sharing their identities, there may have been more individuals who self-reported as trans. This may result in higher levels of mental health difficulties reported as previous studies have found that individuals who identify as transgender tend to face more difficulties throughout their lives (Mueller *et al.*, 2017; Strauss *et al.*, 2020). Overall, however, since our study is not focused on gender, this data does not impact the results significantly.

Examining data

To understand the relationships between the number of ACEs individuals experienced and their PHQ-9, substance-use disorder and self-worth scores, a statistical analysis was conducted. Keeping the number of ACEs as the independent variable, PHQ-9, substance-use disorder and self-worth scores were graphed as the dependent variables. The overall data was graphed by the number of ACEs by looking at the average scores for all three dependent variables among individuals with each ACEs score. The same procedure was repeated for each of the selected ethnic groups: MENA, Native American and Afghan.

Data analysis

The following is the analysis of ACEs and PHQ-9, substance-use disorder and self-worth scores.

Mental health and ACEs

To begin with, the number of respondents for each ACEs score was calculated. This was done by adding 1 point for each negative experience. The number of ACEs determines the score (out of 10 possible points/experiences). As shown in Figure 1, the number of individuals with an ACEs score of 10 was substantially larger than the number of individuals for any other score. This may be due to inaccurate survey responses or may be an actual estimate of the represented sample's experiences. Most likely, this may be a mixture of both inaccuracy and accuracy, with some survey respondents facing a lot of adverse experiences and others inaccurately representing their experiences. Regardless, the scores of 0, 1, 4 and 10 were most common. The scores of 7, 8 and 9 were the least common. The number of respondents with a score of 9 was very limited. This did impact other figures, as shown below.

Due to the abnormally large values of those with a score above 10, we decided to remove those with a score of 10 from the analysis of ACEs score to allow for more accurate data analysis. Before removing those with a score of 10, the MENA American community had one of the highest average ACEs scores. Although this score dropped considerably after the change, we decided to continue focusing on MENA Americans, especially considering the limited pre-existing research on that population.

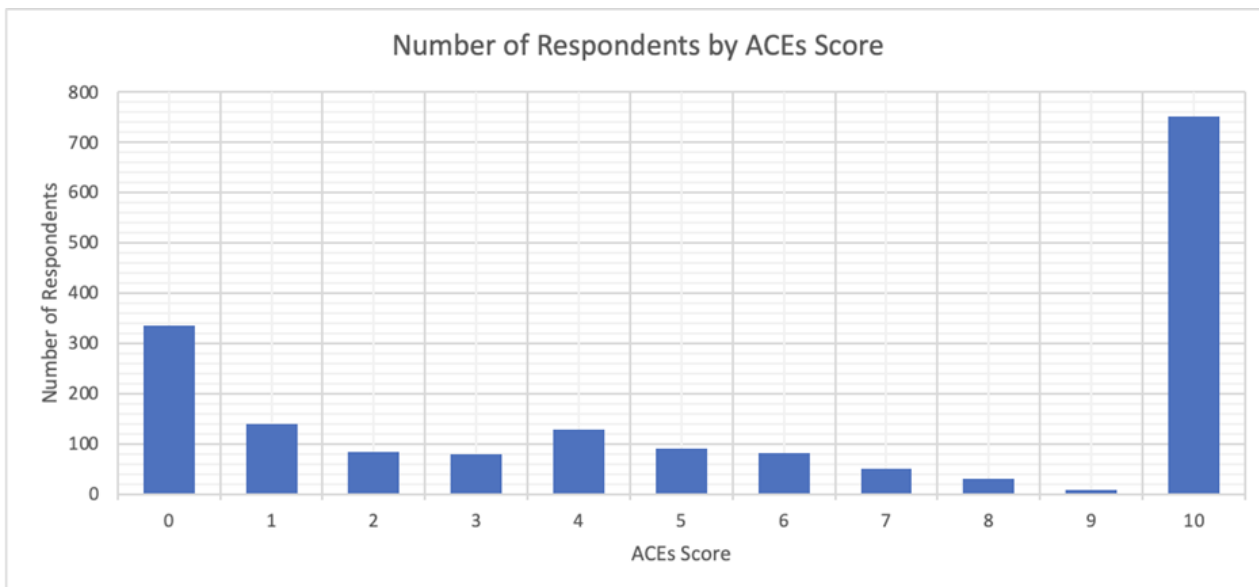


Figure 1: Number of Respondents by ACEs Score

Figure 1 shows the number of respondents for each ACEs score, which indicates the number of negative experiences that were a consistent part of their childhood and which was represented by each of the bars shown.

So, to analyse the impact of these ACEs scores on mental health, the average scores of indicators of mental health were calculated and plotted, as shown in Figure 2. Analysing the resulting curve, distinct relationships were observed. Firstly, with increasing ACEs scores, the substance-use disorder average score also increased while the self-worth average score decreased. In addition, PHQ-9 scores showed an interesting pattern with the highest PHQ-9 scores being found between an ACEs score of 4 and 6. After an ACEs score of 6, the PHQ-9 scores started decreasing. Although an ACEs score of 9 still had a higher PHQ-9 average score than an ACEs score of 0, this decrease impacted the relationship between ACEs and the PHQ-9, making the PHQ-9 slightly different from the other indicators of mental wellness.

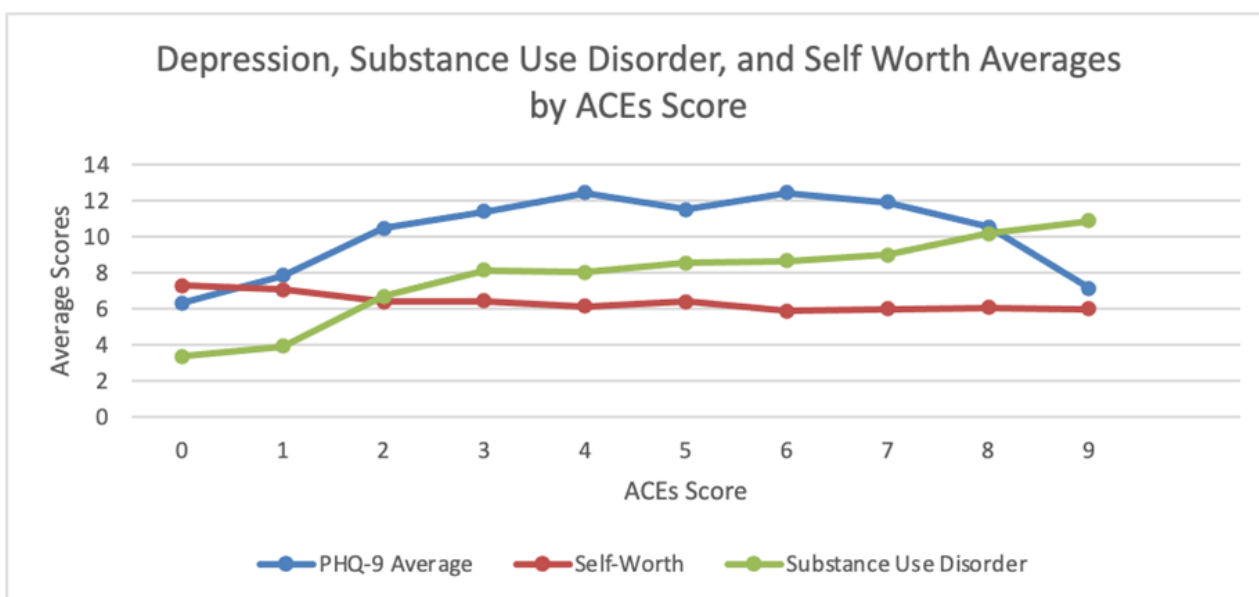


Figure 2: Depression, substance-use disorder and self-worth averages by ACEs score

Figure 2 shows the average scores associated with each ACEs score for depression (PHQ-9), substance-use disorder and self-worth. The blue line represents depression, the orange line represents self-worth, and the grey line represents substance-use disorder. ACEs scores of 10 are left out.

Ethnic-identity breakdown

To understand the role of ethnic identity in ACEs scoring, the average ACEs score for each ethnic identity was listed in Table 2. As shown below, respondents identifying as 'White' had the lowest average score, while members identifying as 'Afghan' had the highest average score, meaning that they had faced more ACEs.

Group	Average (out of 10)
East Asian	1.223
South Asian	1.446
Middle Eastern or North African	1.462
Southeast Asian	1.472
White	2.758
Black or African American	2.939
Hispanic, Latino or Spanish Origin	3.205
Mixed Ethnic Identities	3.25
Native Hawaiian or Other Pacific Islander	3.286
American Indian or Alaska Native	3.333
Other Asian (Afghan)	5.000
Overall	2.594

Table 2: ACEs average score by ethnic-identity groups

Table 2 shows the average ACEs score for each ethnic identity surveyed. The highest score possible is a 10. The averages were rounded to three decimal points.

Similarly, Table 3 lists the average substance-use disorder score by ethnic-identity group. Here, 'East Asians' had the lowest average scores while 'Afghans' again had the highest average score.

Group	Average (out of 16)
East Asian	7.429
Southeast Asian	7.99
White	8.07
South Asian	8.244
Hispanic, Latino or Spanish Origin	8.254
Black or African American	8.62
Middle Eastern or North African	9.504
Mixed Ethnic Identities	9.528
American Indian or Alaska Native	9.786
Native Hawaiian or Other Pacific Islander	9.812
Other Asian (Afghan)	10.053
Overall	9.786

Table 3: Substance-use disorder average score by ethnic identity groups

Table 3 shows the average substance-use disorder score for each ethnic identity surveyed. The highest score possible is a 16. The averages were rounded to three decimal points.

Table 4 lists the average self-worth scores by ethnic-identity groups. With self-worth, the scores are reversed since a higher self-worth score translates into a more positive response. Respondents who identified as 'East Asian' again have the most positive score (or the lowest score), meaning they had the highest self-worth while those identifying as 'Native Hawaiian or Other Pacific Islander' have the least positive score (or the highest score), meaning they had the lowest self-worth.

Group	Average (out of 12)
East Asian	6.411
White	6.404
Black or African American	6.261
Hispanic, Latino or Spanish Origin	6.261
South Asian	6.262
Southeast Asian	6.103
Mixed Ethnic Identities	6.07
Other Asian (Afghan)	6
Middle Eastern or North African	5.991
American Indian or Alaska Native	5.969
Native Hawaiian or Other Pacific Islander	5.895
Overall	6.35

Table 4: Self-worth average score by ethnic-identity groups

Table 4 shows the average self-worth score for each ethnic identity surveyed. The highest score possible is a 12. The averages were rounded to three decimal points.

Since the data showed distinct trends between ACEs scores, and substance-use disorder and self-worth scores, respectively, these three factors were analysed for each ethnic identity group. The top five groups with the highest ACEs score and highest substance-use disorder scores, and the lowest self-worth score were surprisingly almost the exact same: MENA, American Indian or Alaska Native, and Mixed Ethnic Identities, with the exception of MENA having a lower adjusted ACEs average score. To deepen the analysis, the two groups with the highest ACEs score along with MENA were further analysed. These groups were the: Afghan American, MENA American and Native American communities.

Specific ethnic samples

Figure 3 shows the data for the MENA sample. There is a similar shape to the data found for the overall sample. For depression, however, the MENA sample has a peak of 14.14 at an ACEs score of 6, which is substantially higher than the overall sample's peak at an ACEs score of 6 of 12.41. While the substance-use disorder values are similar to the overall sample, the self-worth values are all lower than those of the overall sample at each ACEs score.

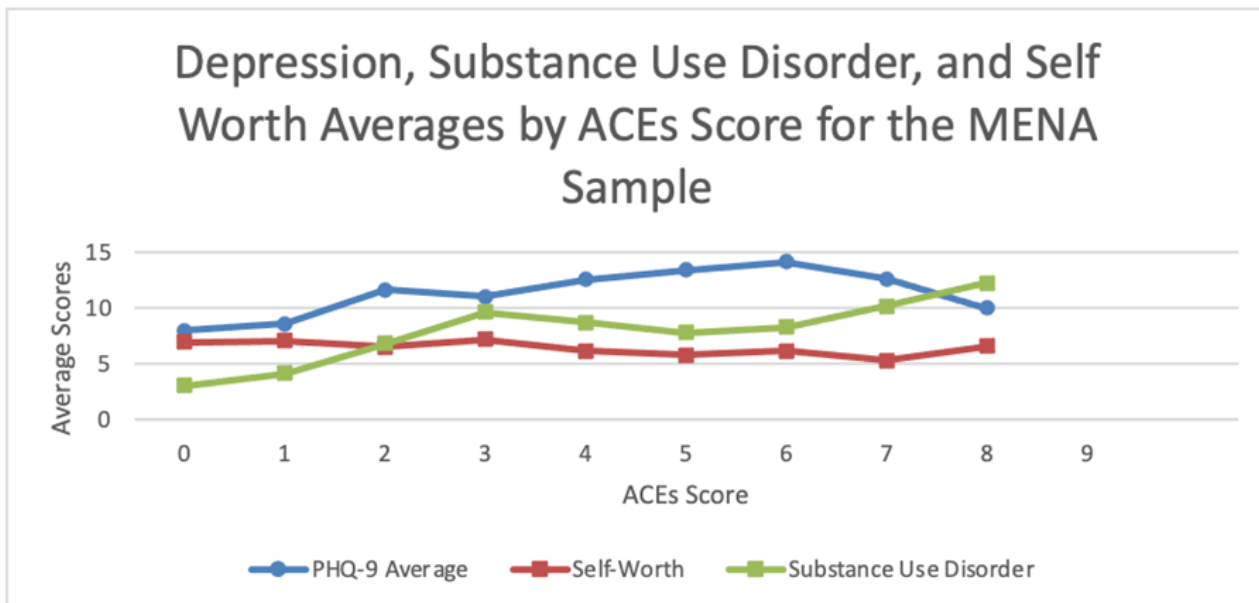


Figure 3: Depression, substance-use disorder and self-worth averages by ACEs score for the Middle Eastern/North African sample

Figure 3 shows the average scores associated with each ACEs score within the MENA sample for depression (PHQ-9), self-worth and substance-use disorder. The blue line represents depression, the orange line represents self-worth, and the grey line represents substance-use disorder. ACEs scores of 10 are left out and no individuals had a score of 9.

Figure 4 shows the data for the Afghan sample. The PHQ-9 values, substance-use disorder values and self-worth values are similar to the overall sample, although this sample has the highest ACEs and substance-use disorder averages.

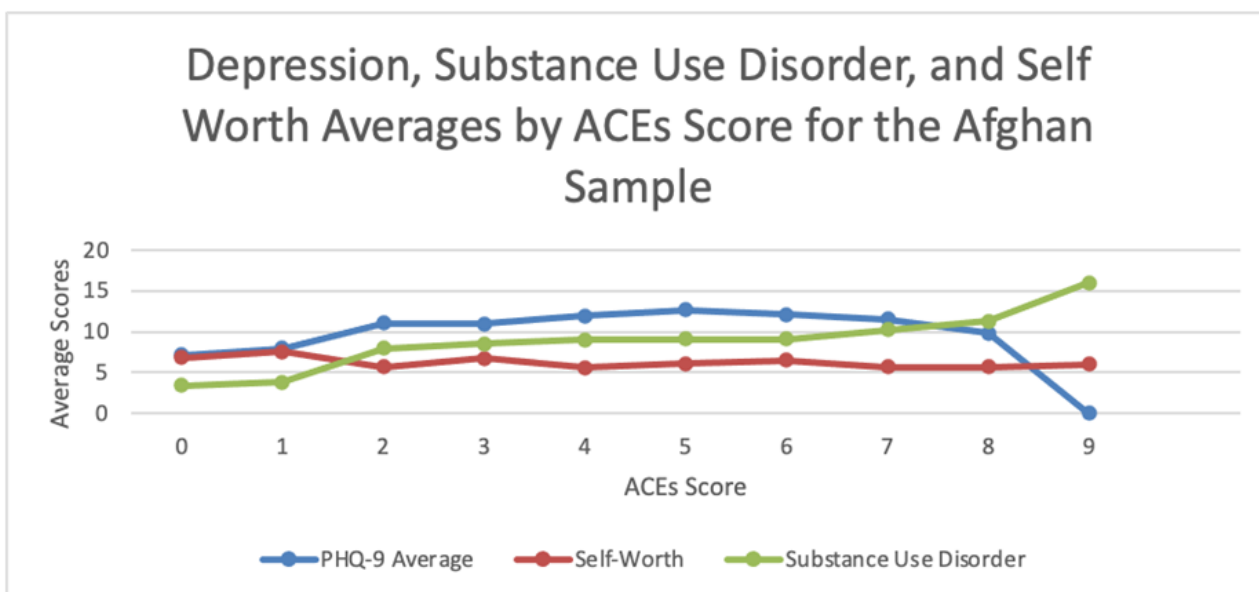


Figure 4: Depression, substance-use disorder, and self-worth averages by ACEs score for the Other Asian (Afghan) sample

Figure 4 shows the average scores associated with each ACEs score within the Other Asian (Afghan) sample for depression (PHQ-9), self-worth and substance-use disorder. The blue line represents depression, the orange line represents self-worth, and the grey line represents substance-use disorder. ACEs scores of 10 are left out.

Lastly, Figure 5 shows the data for the American Indian or Alaska Native sample. For depression, it has a peak of 13.78 at an ACEs score of 4, which is higher than the overall sample’s peak at an ACEs score of 6 of 12.41. For self-worth and substance-use disorder, the scores were similar to the overall sample.

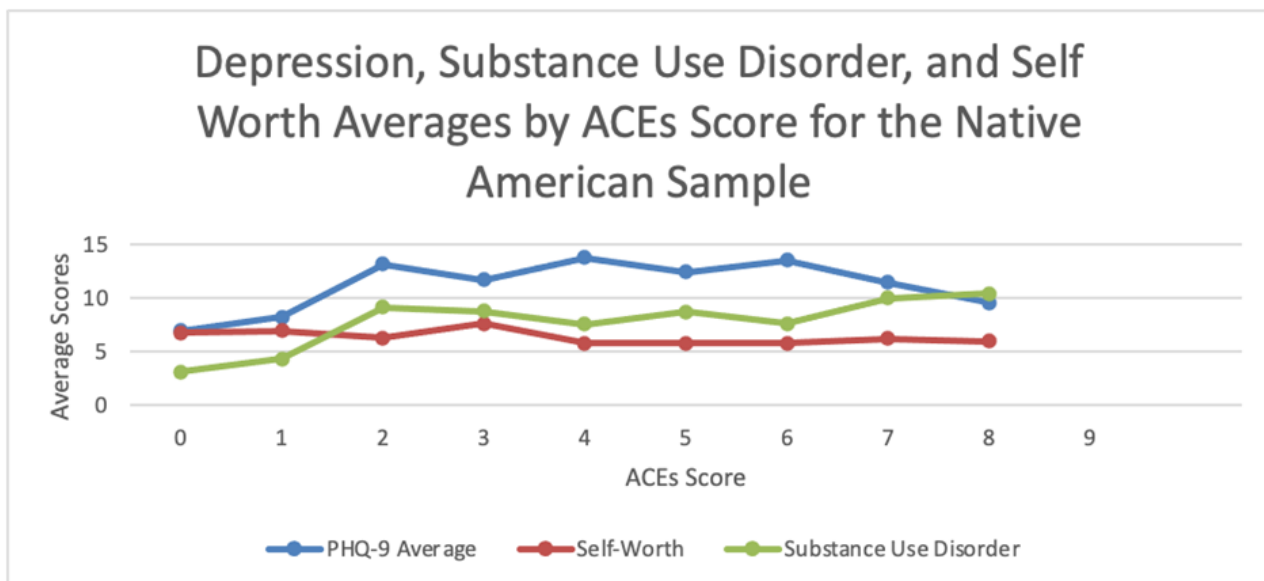


Figure 5: Depression, substance-use disorder and self-worth averages by ACEs Score for the American Indian or Alaska Native sample

Figure 5 shows the average scores associated with each ACEs score within the American Indian or Alaska Native sample for depression (PHQ-9), self-worth and substance-use disorder. The blue line represents depression, the orange line represents self-worth, and the grey line represents substance-use disorder. ACEs scores of 10 are left out and no individuals had a score of 9.

Discussion

Data

As the study demonstrates, there is a strong correlation between mental health and ACEs scores. Overall, mental health declined as ACEs scores increased. Higher ACEs scores correlated with higher substance-use disorders, lower self-worth and higher depression rates. The survey conducted showed that the represented ethnic identities of the Afghan American and Native American communities were the ones with the highest ACEs scores. These same communities, including the MENA American community, also had some of the lowest self-worth scores and highest substance-use disorder scores.

In regard to the depression rates, the PHQ-9 scores of the three samples were generally the highest among ACEs scores of 4–6 and the lowest among scores from 0–1. Specifically for ACEs scores, a score between 0–3 generally showed lower PHQ-9 scores, while scores of 4–6 was generally where the highest PHQ-9 scores lay (meaning the feelings described were felt more often, either nearly every day or every day), and there was a decrease in the depression scores from 7 to 10 ACEs. Essentially, the graphs started low, peaked around the middle and then slightly decreased for all three samples.

The data also found that as ACEs scores increased so did substance-use disorder scores. And although self-worth was lowest among these communities, across ACEs scores, there was a very slight decrease in self-worth scores around an ACEs score of 4, which is similar to what previous studies predicted.

Native Americans

Research on the Native American population has indicated an extreme amount of historical trauma that is at the root of the mental health struggles faced by this community (McLeigh, 2010). Research has indicated that

Native American youth report significantly more depressive symptoms than non-Hispanic White youth, revealing the extent of the problem currently (Serafini *et al.*, 2017). Policies that have led to many Native American rights being infringed upon, resulting in a population that continues to face turmoil societally. This turmoil may play a major role in many Native Americans having high ACEs scores and thus multiple mental health struggles.

Afghan Americans and MENA Americans

West/Central Asia has historically been an unsafe region. In addition to the generational trauma caused by violence and instability in this region, research has indicated that the mental health of children and adolescents in this area has been deteriorating (El-Gilany and Amr, 2010; Mechammil *et al.* 2019). There is also a large refugee population from this region, specifically the Afghan American population in recent times. These struggles may be contributing factors in both Afghan Americans and MENA Americans having disproportionately high ACEs scores, especially since many of them may have immigrated recently or have family/friends in regions with considerable instability.

Ethnic identity

Without data on these minority communities, their struggles would never come to light. This paper emphasises the importance of targeting at-risk minority groups in research efforts and in prevention/treatment efforts. Disaggregating ethnic groups can result in key focus areas coming to light, such as the issues faced by the MENA community that are not faced by the majority of the White-identifying community.

This research discussed ethnic identities that are specifically differentiated into different categories that differ from traditional ethnic-identity grouping. Therefore, most of these groups are rarely ever discussed individually. For example, nearly all traditional ethnic labelling puts all Asian countries into one category. Those with mixed identities are also never fully given a chance to identify with their entire ethnic identity and usually have to choose a single identity to identify as. Since this study emphasised each individual having a chance to express their ethnic identity by what they believe, this makes this study unique.

But this uniqueness comes at the cost of not having many comparisons by which the results can be measured. Although many articles present beneficial information on well-known ethnic communities, not many discuss identities such as the Afghan community or the Middle Eastern and North African communities. This is why there needs to be more research done on these specific ethnic identities.

Conclusions

Learning about Adverse Childhood Experiences of individuals with different backgrounds can provide a unique perspective into how mental health can be impacted by the environment that an individual grows up in. Policy reforms and interventions stemming from this analysis may help counter the deleterious effects of ACEs. Previous studies have found that an ACEs score above 6 as being the range associated with shortened life spans of up to 20 years (Brown *et al.*, 2009). Interestingly, an ACEs score of 6 was found to be the score associated with the highest average PHQ-9 score in this study as well. Through obtaining such data, where the specifics on which community has high ACEs scores and what their mental health is characterised by is known, a step further can be taken by having individuals deal with their past traumatic experiences through

help from mental health professionals. Getting individuals in these communities the care that they need may allow them to have more time with their loved ones or even to heal from those past traumatic experiences.

Therefore, it is crucial that research on these communities, with ethnic identity being prioritised, be continued as these are the communities that are often overlooked. This research also presents an argument for early intervention in circumstances that deal with early childhood abuse, which will lead to the reduction of the risk of having a mental illness in the later years.

Limitations

This survey did have its share of limitations. Since this was an anonymous survey, we were unable to distinguish whether the answers given by participants were genuine or if the questions were answered randomly. However, since this is true of all surveys, it may not have had a large impact. The incentive of receiving a gift card for those who complete the survey first may have further promoted answering quickly without reading the questions. The incentive could also affect the motive of the individuals so that instead of answering to contribute to the research of mental health, they may have participated for the reward of the gift card. However, this is a common method used in survey research.

Due to the nature of these questions, participants may not have been completely honest about their answers. Even though the participants were reassured about the anonymity of their answers, there were many personal questions that the participants may have been hesitant to answer honestly due to a fear of having their answers revealed. However, the emphasis on anonymity may have meant that participants were not majorly impacted by this.

The accuracy of memory is another limitation. Many participants may not remember their childhood memories, or may even remember them incorrectly. And, since this survey requires the memory of traumatic events, the mechanism of 'repressed memories' is another limitation to take into context. Individuals who have endured abuse as children may store away these memories from consciousness as a way to shelter from the pain that they experienced (Paul, 2015). Many individuals who may have gone through traumatic childhood experiences may have repressed those memories and marked 'No' to questions regarding that event.

Another limitation depended on the outreach of the survey and flyer. Those students who were proficient with technology would be the ones who saw the flyer and were able to answer the survey. And, since we are Science, Technology, Engineering and Mathematics (STEM) majors, we reached out to other primarily STEM major undergraduate students and faculty to help advertise the survey. So, even though the survey was open to all students regardless of their major, it can be assumed that a large quantity of the students may have been primarily from the STEM category.

A final limitation to be listed is the specificity of the population and the sample that this research was measuring. Ohlone College is unique in having students from the Bay Area, a region with various immigrant communities. This resulted in students from a multitude of ethnic backgrounds participating in the survey. However, since this research is looking specifically at one community college, the population and sample are very specific. Therefore, even though Ohlone College has a very diverse student body, because of its specificity as a small community college in California, it would not properly represent the various ethnic identities that this survey attempted to look at.

This study is unique both with its novel and descriptive ethnic-identity categories and with applying ethnic identities to mental health and Adverse Childhood Experiences. Our findings about the ethnic-identity groups that are majorly impacted by ACEs reveal affinity groups that may be targeted in future intervention strategies. Future research on the reasons these populations face more ACEs and on strategies that may mitigate the impacts of ACEs on these communities would be necessary.

Acknowledgements

We would like to thank Dr Laurie Issel-Tarver for her support and guidance on this project as well as Dr Sang Leng Trieu for editing our Mission Statement. We also want to thank Dr Magali Fassiotto (Stanford University School of Medicine – Office of Faculty Development and Diversity), Barbara Jerome (MPH, Stanford University School of Medicine – Office of Faculty Development and Diversity), Lisa Herron (MPH, Well-being and Equity in the World), and Hardeep Kaur (CPA, Lead Consultant at Kaiser Permanente) for reviewing and editing our research paper. Furthermore, we would like to thank the Ohlone College Inter-Club Council for providing us with the money used to purchase the survey incentive gift cards. Additionally, we would also like to thank the following professors for assisting us in advertising the survey link of our project by sharing it with their students: Dr Lisa Wesoloski, Dr Luba Voloshko, Dr Mark Barnby, Dr Sima Sarvari, Dr Margaret Lee, Dr Jennifer Hurley, Counselor Mandy Kwok-Yip, Dr Becky Gee, Professor Nabeel Atique and Professor Anh Nguyen.

Appendices

Appendix 1: ACEs Questionnaire

Adverse Childhood Experience (ACE) Questionnaire

Finding your ACE Score ra hbr 10 24 06

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household **often** ...
Swear at you, insult you, put you down, or humiliate you?
or
Act in a way that made you afraid that you might be physically hurt?
Yes No If yes enter 1 _____

2. Did a parent or other adult in the household **often** ...
Push, grab, slap, or throw something at you?
or
Ever hit you so hard that you had marks or were injured?
Yes No If yes enter 1 _____

3. Did an adult or person at least 5 years older than you **ever**...
Touch or fondle you or have you touch their body in a sexual way?
or
Try to or actually have oral, anal, or vaginal sex with you?
Yes No If yes enter 1 _____

4. Did you **often** feel that ...
No one in your family loved you or thought you were important or special?
or
Your family didn't look out for each other, feel close to each other, or support each other?
Yes No If yes enter 1 _____

5. Did you **often** feel that ...
You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?
or
Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
Yes No If yes enter 1 _____

6. Were your parents **ever** separated or divorced?
Yes No If yes enter 1 _____

7. Was your mother or stepmother:
Often pushed, grabbed, slapped, or had something thrown at her?
or
Sometimes or often kicked, bitten, hit with a fist, or hit with something hard?
or
Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
Yes No If yes enter 1 _____

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
Yes No If yes enter 1 _____

9. Was a household member depressed or mentally ill or did a household member attempt suicide?
Yes No If yes enter 1 _____

10. Did a household member go to prison?
Yes No If yes enter 1 _____

Now add up your "Yes" answers: _____ This is your ACE Score

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)				
Over the <u>last 2 weeks</u>, how often have you been bothered by any of the following problems? (Use "✓" to indicate your answer)	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
FOR OFFICE CODING <u> 0 </u> + <u> </u> + <u> </u> + <u> </u> =Total Score: <u> </u>				
If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?				
Not difficult at all <input type="checkbox"/>	Somewhat difficult <input type="checkbox"/>	Very difficult <input type="checkbox"/>	Extremely difficult <input type="checkbox"/>	
Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.				

Appendix 3: Original list of survey questions

Q1 We will be focusing on a sample collected from a population of Ohlone College students. The data collected will be anonymous. There will be no names or other personally identifying information collected. All data will be used strictly by our group for research purposes only and raw data will not be released to the public. Items presented include only multiple-choice questions. There is no risk to subjects taking the

survey, however, some questions may be discomfoting. If you no longer would like to proceed with the survey, you have the right to withdraw at any moment.

Answer Choices:

1. Yes, I have read and understood the informed consent and would like to proceed with the survey.
2. No, I have not read and/or understood the informed consent and would not like to proceed with the survey.

Q2 How would you describe yourself? If other, please specify.

Answer Choices:

1. Female Male Trans Female
2. Trans Male
3. Gender Nonconforming
4. Different Identity
5. Prefer Not to Say
6. Other (please specify)

Q3 Which category best describes you? Please click on the category.

Answer Choices:

1. White (e.g. German, Irish, English, Italian, Polish, French, etc.)
2. Latino
3. Black
4. East Asian
5. Southeast Asian
6. South Asian
7. Other Asian (Afghan)
8. Native American
9. MENA
10. Pacific Islander
11. Mixed Ethnic Identities
12. Other
13. Specifics

Q4 Please provide the specifics for the category you picked for question 3 in the comment section below. (e.g. Asian – half-Chinese, half-Korean OR Middle Eastern/North African – Egyptian)

Answer Choices:

Open-ended

Q5 I browse the headings, pictures, chapter questions and summaries before I start reading a chapter and I look for familiar concepts as well as ideas that spark my interest as I read.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q6 I take notes, and rewrite them, as I read my textbooks and during class lectures.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q7 I study where it is quiet and has few distractions; I take short breaks while studying for a long period of time, I set study goals, such as the number of problems I will do or pages I will read, and I use a 'to do' list to keep track of completing my academic and personal activities.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q8 I quiz myself over material that could appear on future exams and quizzes and say difficult concepts out loud in order to understand them better. I also start studying for quizzes and tests at least several days before I take them.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q9 I study with a classmate or group and when I don't understand something, I get help from tutors, classmates and my instructors.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q10 In the last month, how often have you felt that you were unable to control the important things in your life?

Answer Choices:

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

Q11 In the last month, how often have you felt confident about your ability to handle your personal problems?

Answer Choices:

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

Q12 In the last month, how often have you felt that things were going your way?

Answer Choices:

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

Q13 In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Answer Choices:

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

Q14 I feel that I am a person of worth, at least on an equal plane with others.

Answer Choices:

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

Q15 I feel that I have a number of good qualities.

Answer Choices:

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

Q16 All in all, I am inclined to feel that I am a failure.

Answer Choices:

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

Q17 I wish I could have more respect for myself.

Answer Choices:

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

Q18 Which of the following are you experiencing (or did you experience) during COVID-19 (Coronavirus)?
(check all that apply)

Answer Choices:

1. Being diagnosed with COVID-19
2. Fear of getting COVID-19
3. Fear of giving COVID-19 to someone else
4. Stigma or discrimination from other people (e.g., people treating you differently because of your identity, having symptoms or other factors related to COVID-19)
5. Personal financial loss; conflicts about finance or work/employment (e.g., lost wages, job loss, investment/retirement loss, travel-related cancellations)
6. Confusion about what COVID-19 is, how to prevent it, or why social distancing/isolation/quarantines are needed
7. Feeling that I was contributing to the greater good by preventing myself or others from getting COVID-19
8. Getting emotional or social support from family, friends, partners, a counsellor or someone else
9. Getting financial support from family, friends, partners, an organization or someone else
10. Conflicts about decisions about going out/having visitors to the home (e.g., on errands, to appointments, for visits)
11. Togetherness because of spending time together, showing emotional support, helping each other (e.g., hobbies, television, playing games, social media)

Q19 I feel more nervous and anxious than usual.

Answer Choices:

1. None or little of the time
2. Some of the time
3. Good part of the time
4. Most of the time

Q20 Before your 18th birthday, did a parent or other adult in the household often or very often swear at you, insult you, put you down, humiliate you or act in a way that made you afraid that you might be physically hurt?

Answer Choices:

1. Yes
2. No

Q21 Before your 18th birthday, did a parent or other adult in the household often or very often push, grab, slap, throw something at you or ever hit you so hard that you had marks or were injured?

Answer Choices:

1. Yes
2. No

Q22 Before your 18th birthday, did an adult or person at least 5 years older than you ever touch or fondle you, have you touch their body in a sexual way, attempt, or actually have oral, anal or vaginal intercourse with you?

Answer Choices:

1. Yes
2. No

Q23 Before your 18th birthday, did you often or very often feel that no one in your family loved you or thought you were important or special, your family didn't look out for each other, feel close to each other or support each other?

Answer Choices:

1. Yes
2. No

Q24 Before your 18th birthday, did you often or very often feel that you didn't have enough to eat, had to wear dirty clothes, had no one to protect you, your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Answer Choices:

1. Yes
2. No

Q25 Before your 18th birthday, were your parents ever separated or divorced?

Answer Choices:

1. Yes
2. No

Q26 Before your 18th birthday, was your mother or stepmother often or very often pushed, grabbed, slapped, had something thrown at her, sometimes, often or very often kicked, bitten, hit with a fist, hit with something hard, or ever repeatedly hit over for at least a few minutes or threatened with a gun or knife?

Answer Choices:

1. Yes
2. No

Q27 Before your 18th birthday, did you live with anyone who was a problem drinker or alcoholic or who used street drugs?

Answer Choices:

1. Yes
2. No

Q28 Before your 18th birthday, was a household member depressed or mentally ill, or did a household member attempt suicide?

Answer Choices:

1. Yes
2. No

Q29 Before your 18th birthday, did a household member go to prison?

Answer Choices:

1. Yes
2. No

Q30 In the PAST 12 MONTHS, how often have you used any tobacco product (for example, cigarettes, e-cigarettes, cigars, pipes or smokeless tobacco)?

Answer Choices:

1. Daily or Almost Daily
2. Weekly
3. Monthly
4. Less than Monthly
5. Never

Q31 In the PAST 12 MONTHS, how often have you had drinks containing alcohol in one day?

Answer Choices:

1. Daily or Almost Daily
2. Weekly
3. Monthly
4. Less than Monthly

5. Never

Q32 In the PAST 12 MONTHS, how often have you used any drugs including marijuana, cocaine or crack, heroin, methamphetamine (crystal meth), hallucinogens, ecstasy/MDMA?

Answer Choices:

1. Daily or Almost Daily
2. Weekly
3. Monthly
4. Less than Monthly
5. Never

Q33 In the PAST 12 MONTHS, how often have you used any prescription medications just for the feeling, more than prescribed or that were not prescribed for you? Prescription medications that may be used this way include: Opiate pain relievers (for example, OxyContin, Vicodin, Percocet, Methadone); Medications for anxiety or sleeping (for example, Xanax, Ativan, Klonopin); Medications for ADHD (for example, Adderall or Ritalin)

Answer Choices:

1. Daily or Almost Daily
2. Weekly
3. Monthly
4. Less than Monthly
5. Never

Q34 How often have you been bothered by the following over the past 2 weeks: Little interest or pleasure in doing things?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q35 How often have you been bothered by the following over the past 2 weeks: Feeling down, depressed or hopeless?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q36 How often have you been bothered by the following over the past 2 weeks: Trouble falling or staying asleep, or sleeping too much?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q37 How often have you been bothered by the following over the past 2 weeks: Feeling tired or having little energy?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q38 How often have you been bothered by the following over the past 2 weeks: Poor appetite or overeating?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q39 How often have you been bothered by the following over the past 2 weeks: Feeling bad about yourself – or that you are a failure or have let yourself or your family down?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q40 How often have you been bothered by the following over the past 2 weeks: Trouble concentrating on things, such as reading the newspaper or watching television?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q41 How often have you been bothered by the following over the past 2 weeks: Moving or speaking so slowly that other people could have noticed? Or so fidgety or restless that you have been moving a lot more than usual?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q42 How often have you been bothered by the following over the past 2 weeks: Thoughts that you would be better off dead, or thoughts of hurting yourself in some way?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q43 Lastly, please provide your email address (Most preferably student email) to receive a gift card. Type in N/A if you do not want to receive a gift card.

Answer Choices:

Open-ended

Appendix 4: Revised list of survey questions

Q1 We will be focusing on a sample collected from a population of Ohlone College students. The data collected will be anonymous. There will be no names or other personally identifying information collected. All data will be used strictly by our group for research purposes only and raw data will not be released to the public. Items presented include only multiple-choice questions. There is no risk to subjects taking the survey, however, some questions may be discomforting. If you no longer would like to proceed with the survey, you have the right to withdraw at any moment.

Answer Choices:

1. Yes, I have read and understood the informed consent and would like to proceed with the survey.
2. No, I have not read and/or understood the informed consent and would not like to proceed with the survey.

Q2 How would you describe yourself? If other, please specify.

Answer Choices:

1. Female Male Trans Female
2. Trans Male
3. Gender Nonconforming
4. Different Identity
5. Prefer Not to Say
6. Other (please specify)

Q3 Which category best describes you? Please click on the category.

Answer Choices:

1. White (e.g. German, Irish, English, Italian, Polish, French, etc.)
2. Hispanic, Latino or Spanish origin (e.g. Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Colombian, etc.)
3. Black or African American (e.g. African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)
4. East Asian (e.g. Chinese, Japanese, Korean, Okinawan, Taiwanese, Tibetan)
5. Southeast Asian (e.g. Bruneian, Burmese, Cambodian, Filipino, Hmong, Indonesian, Laotian, Malaysian, Mien, Singaporean, Timorese, Thai, Vietnamese)
6. South Asian (e.g. Bangladeshi, Bhutanese, Indian, Maldivians, Nepali, Pakistani, Sri Lankan)
7. Other Asian (Afghan)
8. American Indian or Alaska Native(e.g. Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.)
9. Middle Eastern or North African (e.g. Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc.)
10. Native Hawaiian or Other Pacific Islander (e.g. Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, etc.)
11. Mixed Ethnic Identities
12. Some other race, ethnicity or origin

Q4 I browse the headings, pictures, chapter questions, and summaries before I start reading a chapter and I look for familiar concepts as well as ideas that spark my interest as I read.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q5 I take notes, and rewrite them, as I read my textbooks and during class lectures.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q6 I study where it is quiet and has few distractions, I take short breaks while studying for a long period of time, I set study goals, such as the number of problems I will do or pages I will read, and I use a 'to do' list to keep track of completing my academic and personal activities.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q7 I quiz myself over material that could appear on future exams and quizzes and say difficult concepts out loud in order to understand them better. I also start studying for quizzes and tests at least several days before

I take them.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q8 I study with a classmate or group and when I don't understand something, I get help from tutors, classmates and my instructors.

Answer Choices:

1. Rarely
2. Sometimes
3. Often

Q9 In the last month, how often have you felt that you were unable to control the important things in your life?

Answer Choices:

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

Q10 In the last month, how often have you felt confident about your ability to handle your personal problems?

Answer Choices:

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

Q11 In the last month, how often have you felt that things were going your way?

Answer Choices:

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

Q12 In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Answer Choices:

1. Never
2. Almost Never
3. Sometimes
4. Fairly Often
5. Very Often

Q13 I feel that I am a person of worth, at least on an equal plane with others.

Answer Choices:

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

Q14 I feel that I have a number of good qualities.

Answer Choices:

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

Q15 All in all, I am inclined to feel that I am a failure.

Answer Choices:

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

Q16 I wish I could have more respect for myself.

Answer Choices:

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

Q17 Which of the following are you experiencing (or did you experience) during COVID-19 (coronavirus)?
(check all that apply)

Answer Choices:

1. Being diagnosed with COVID-19
2. Fear of getting COVID-19

3. Fear of giving COVID-19 to someone else
4. Stigma or discrimination from other people (e.g., people treating you differently because of your identity, having symptoms or other factors related to COVID-19)
5. Personal financial loss; conflicts about finance or work/employment (e.g., lost wages, job loss, investment/retirement loss, travel-related cancellations)
6. Confusion about what COVID-19 is, how to prevent it, or why social distancing/isolation/quarantines are needed
7. Feeling that I was contributing to the greater good by preventing myself or others from getting COVID-19
8. Getting emotional or social support from family, friends, partners, a counsellor or someone else
9. Getting financial support from family, friends, partners, an organization or someone else
10. Conflicts about decisions about going out/having visitors to the home (e.g., on errands, to appointments, for visits)
11. Togetherness because of spending time together, showing emotional support, helping each other (e.g., hobbies, television, playing games, social media)

Q18 I feel more nervous and anxious than usual.

Answer Choices:

1. None or little of the time
2. Some of the time
3. Good part of the time
4. Most of the time

Q19 Before your 18th birthday, did a parent or other adult in the household often or very often swear at you, insult you, put you down, humiliate you or act in a way that made you afraid that you might be physically hurt?

Answer Choices:

1. Yes
2. No

Q20 Before your 18th birthday, did a parent or other adult in the household often or very often push, grab, slap, throw something at you or ever hit you so hard that you had marks or were injured?

Answer Choices:

1. Yes
2. No

Q21 Before your 18th birthday, did an adult or person at least 5 years older than you ever touch or fondle you, have you touch their body in a sexual way, attempt, or actually have oral, anal or vaginal intercourse with you?

Answer Choices:

1. Yes

2. No

Q22 Before your 18th birthday, did you often or very often feel that no one in your family loved you or thought you were important or special, your family didn't look out for each other, feel close to each other, or support each other?

Answer Choices:

1. Yes
2. No

Q23 Before your 18th birthday, did you often or very often feel that you didn't have enough to eat, had to wear dirty clothes, had no one to protect you, your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Answer Choices:

1. Yes
2. No

Q24 Before your 18th birthday, were your parents ever separated or divorced?

Answer Choices:

1. Yes
2. No

Q25 Before your 18th birthday, was your mother or stepmother often or very often pushed, grabbed, slapped, had something thrown at her, sometimes, often or very often kicked, bitten, hit with a fist, hit with something hard, or ever repeatedly hit over for at least a few minutes or threatened with a gun or knife?

Answer Choices:

1. Yes
2. No

Q26 Before your 18th birthday, did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?

Answer Choices:

1. Yes
2. No

Q27 Before your 18th birthday, was a household member depressed or mentally ill, or did a household member attempt suicide?

Answer Choices:

1. Yes
2. No

Q28 Before your 18th birthday, did a household member go to prison?

Answer Choices:

1. Yes
2. No

Q29 In the PAST 12 MONTHS, how often have you used any tobacco product (for example, cigarettes, e-cigarettes, cigars, pipes or smokeless tobacco)?

Answer Choices:

1. Daily or Almost Daily
2. Weekly
3. Monthly
4. Less than Monthly
5. Never

Q30 In the PAST 12 MONTHS, how often have you had drinks containing alcohol in one day?

Answer Choices:

1. Daily or Almost Daily
2. Weekly
3. Monthly
4. Less than Monthly
5. Never

Q31 In the PAST 12 MONTHS, how often have you used any drugs including marijuana, cocaine or crack, heroin, methamphetamine (crystal meth), hallucinogens, ecstasy/MDMA?

Answer Choices:

1. Daily or Almost Daily
2. Weekly
3. Monthly
4. Less than Monthly
5. Never

Q32 In the PAST 12 MONTHS, how often have you used any prescription medications just for the feeling, more than prescribed or that were not prescribed for you? Prescription medications that may be used this way include: Opiate pain relievers (for example, OxyContin, Vicodin, Percocet, Methadone); Medications for anxiety or sleeping (for example, Xanax, Ativan, Klonopin); Medications for ADHD (for example, Adderall or Ritalin)

Answer Choices:

1. Daily or Almost Daily
2. Weekly
3. Monthly

4. Less than Monthly
5. Never

Q33 How often have you been bothered by the following over the past 2 weeks: Little interest or pleasure in doing things?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q34 How often have you been bothered by the following over the past 2 weeks: Feeling down, depressed or hopeless?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q35 How often have you been bothered by the following over the past 2 weeks: Trouble falling or staying asleep, or sleeping too much?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q36 How often have you been bothered by the following over the past 2 weeks: Feeling tired or having little energy?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q37 How often have you been bothered by the following over the past 2 weeks: Poor appetite or overeating?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q38 How often have you been bothered by the following over the past 2 weeks: Feeling bad about yourself – or that you are a failure or have let yourself or your family down?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q39 How often have you been bothered by the following over the past 2 weeks: Trouble concentrating on things, such as reading the newspaper or watching television?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q40 How often have you been bothered by the following over the past 2 weeks: Moving or speaking so slowly that other people could have noticed? Or so fidgety or restless that you have been moving a lot more than usual?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q41 How often have you been bothered by the following over the past 2 weeks: Thoughts that you would be better off dead, or thoughts of hurting yourself in some way?

Answer Choices:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Q42 Lastly, please provide your email address (Most preferably student email) to receive a gift card. Type in N/A if you do not want to receive a gift card.

Answer Choices:

Open-ended

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Glossary

Adverse Childhood Experiences: Childhood events, varying in severity and often chronic, occurring in a child's family or social environment that cause harm or distress, thereby disrupting the child's physical or psychological health and development (Kalankis et. al, 2014).

CDC-Kaiser ACE Study: 'The CDC-Kaiser Permanente adverse childhood experiences (ACE) study is one of the largest investigations of childhood abuse and neglect and household challenges and later-life health and well-being. The original ACE study was conducted at Kaiser Permanente from 1995 to 1997 with two waves of data collection. Over 17,000 Health Maintenance Organization members from Southern California receiving physical exams completed confidential surveys regarding their childhood experiences and current health status and behaviors.' (CDC, n.d.).

Resilience: Resilience is the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional and behavioral flexibility, and adjustment to external and internal demands (American Psychological Association, n.d.).

Substance Use Disorder: A treatable, chronic disease characterized by a problematic pattern of use of substances leading to impairments in health, social function and control over substance use (CDC, n.d.).

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