CHALLENGER

VOLUME 006

2024-2025

"Somewhere, something incredible is waiting to be known"

– Carl Sagan

VOLUME 6

2024 – 2025

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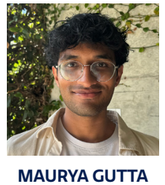

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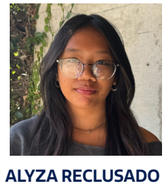

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EDITORS' **LETTER**

Dear Reader,

Thank you for being a part of the sixth volume of Challenger Research Journal (CRJ). This student journal was established in 2019 as a collaboration between UC San Diego undergraduate students and the Undergraduate Research Hub. While we have published multiple volumes since then, our foundation continues to rest on a mission of inclusivity and advocacy for the advancement of student researchers, particularly those who are underrepresented across academic disciplines in higher education and research. We are thus extremely proud to aid in publishing the works of Challenger scholars on E-Scholarship, where their recognition and academic endeavors can be uplifted to reach wider audiences.

The two papers featured in this volume underscore the external factors that shape students' feelings of belonging on undergraduate campuses. They highlight the diverse needs of students based on cultural, social, and spatial experiences, with both advocating for more inclusive approaches to promote student well-being. The first paper, authored by Jarvis Tran, addresses the environmental and spatial factors that influence students' place attachment at UC San Diego. Tran analyzes the various meaningful connections students have made within on-campus public spaces while detailing the multipurpose nature of the spaces themselves. He asserts that college campuses should prioritize the expansion and maintenance of public spaces to meet the diverse and evolving needs of their student bodies.

The second paper, written by Shivani Sharma, addresses cultural stigma impacting mental health amongst South Asian students. Her study aims to assess the behaviors and perceptions South Asian students at UC San Diego hold regarding mental health while examining how interactions between sociocultural factors and willingness to discuss mental health topics shape this population's overall well-being. With her findings, she hopes to increase awareness about how mental health stigmas in South Asian culture discourage open discussions and help-seeking behaviors and advocate for increased culturally sensitive mental health resources.

This volume represents the culmination of a year's worth of tireless work by our board members, student authors, mentors, and advisors. We are immensely proud to present this volume and all the individuals who have contributed to bringing it to life. We sincerely thank you for your support in reading and engaging with the papers authored by our talented students.

Sincerely,

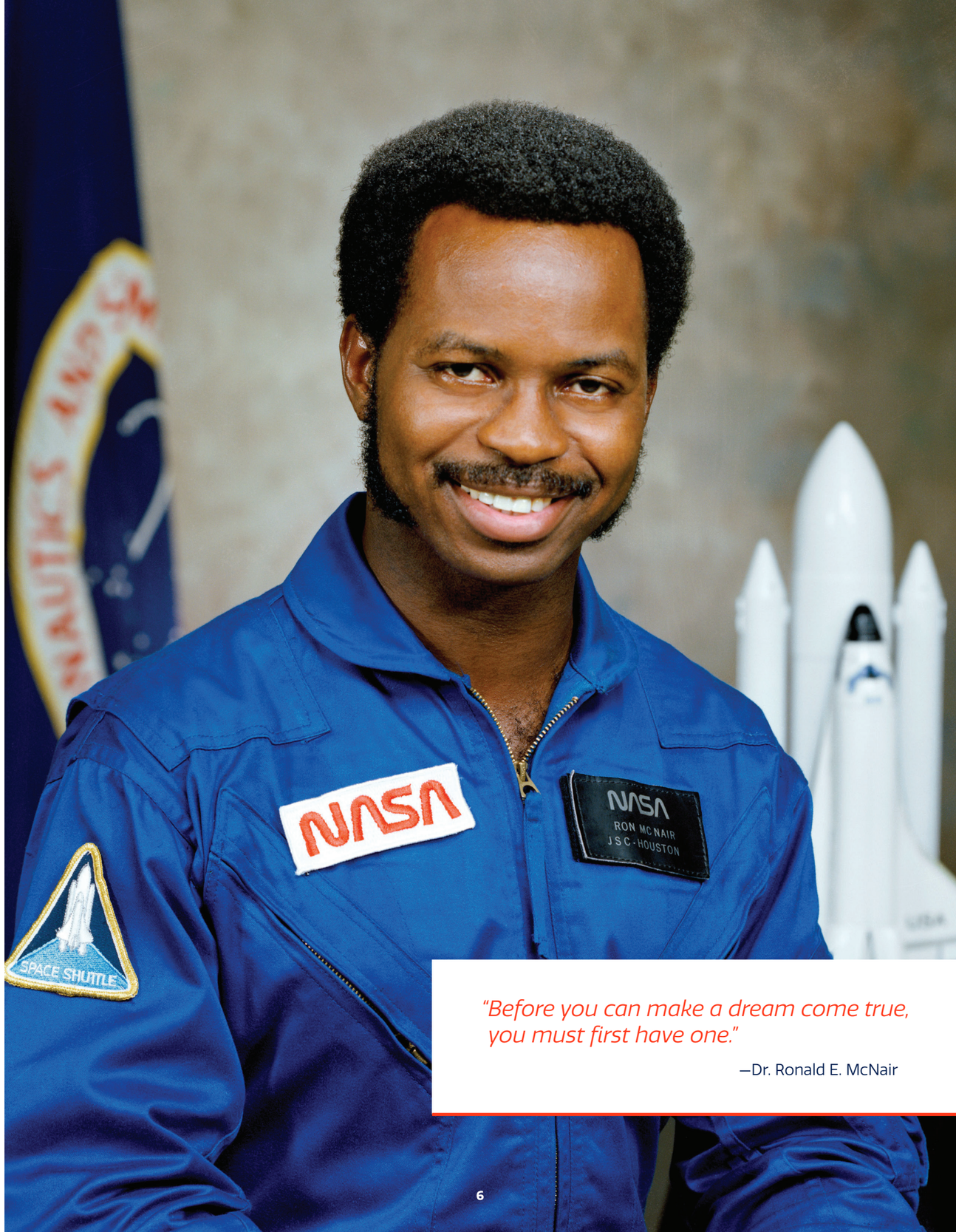
Iliana Kleiner and Leanne Liaw
Co-Editors-in-Chief

In Commemoration of
Dr. Ronald E. McNair

Ronald McNair was not born under particularly unusual circumstances. He grew up in Lake City, South Carolina during the 1950's when segregation dominated the lives of African Americans in the South, forcing most to live in poverty and with limited access to resources. Despite his humble beginnings, McNair would go on to earn a PhD in Physics at M.I.T., became one of the first African American astronauts, and be honored posthumously by the US Congress with a federal education program dedicated in his name.

From a young age, Ronald McNair demonstrated an unshakable will to pursue his dreams in the face of adversity. Growing up in South Carolina during the 1950s, McNair, like other blacks at the time, was prohibited from using the same facilities as whites. Despite this, one day when McNair was nine years old, he went to the local public library to check out books on advanced science and calculus. As he stepped into line, the librarian refused to let him check out the books, instead demanding he leave. A young, passionate McNair would not budge, and police were eventually called along with his mother. In the end, the policemen allowed McNair to check out his books, and the library has since been renamed after him, in honor of the boy who refused to yield. McNair refused to let his social surroundings dictate his future endeavors.

While growing up, McNair's interest in space exploration would manifest with the launch of Sputnik in 1957, and later grow with Star Trek, which featured a diverse cast. Excellingin his studies at school, he became the first in his family to attend college at North Carolina A&T and would later matriculate at M.I.T., where he earned a PhD in Laser Physics. McNair would go on to be selected by NASA to become a crew member of the Space Shuttle Challenger, as well as the second African American to reach space. While in space, he served as a mission specialist and operated the robotic arm of Challenger. Unfortunately, McNair was one of seven crew members who were killed in January of 1986, when Challenger exploded moments after lift-off due to a malfunction in the rocket's boosters. McNair's legacy endures through the education initiatives founded in his name, and hislife serves as an inspiration for individuals who are born into disadvantaged and similarly challenging circumstances.



"Before you can make a dream come true, you must first have one."

—Dr. Ronald E. McNair

STUDENT PAPER 1

Mental Health in South Asian Culture

Researcher: Shivani Sharma | Advisor: Dr. Cheryl Anderson

Abstract

In South Asian culture, the topic of mental health is extremely stigmatized. For young adults who are susceptible to facing various obstacles that impact their mental well-being, it is important to examine the cultural factors that contribute to the stigma surrounding this topic. Delving into the behaviors and perceptions of South Asian college students uncovers the multitude of intertwined influences that impact the development of one's mental health. This study aims to answer the question, "What are the behaviors and perceptions surrounding mental health for UC San Diego students who are South Asian?" An online survey was implemented to collect data from 148 South Asian students at UC San Diego, introducing a mixed-method design to draw findings. The results revealed that mental well-being is significantly shaped by the interaction of sociocultural factors, such as family dynamics and pressures, experiences with stereotyping, comfort with discussing mental health, and expectations surrounding sexuality and gender identity. The scope of this study examines various mental health perceptions and behaviors concerning the cultural stigma presented, bringing attention to the ways in which this population are affected by cultural attitudes and patterns. These findings bring awareness to the stigma surrounding mental health topics in South Asian culture and reflect the interventions needed to destigmatize this topic, especially among college students at a vulnerable period of development. This study sheds light on the cultural stigma that this community faces, presenting the critical need for strategies to create safe environments for South Asian young adults to express their mental well-being.

Introduction

In South Asian communities, mental health is often surrounded by serious stigma. South Asian college students have been shown to use mental health services and psychological services less frequently than students of different ethnicities (Arora et al., 2016). In the United States, South Asian students are still significantly affected by mental health issues that are seen in students of other communities, commonly displayed in forms of anxiety and depression (*Mental Health Facts - SAPHA*, n.d.). Researchers have investigated the unique stressors that South Asian youth face, as well as their help-seeking trajectories, to find that acculturative stress, intergenerational conflict, and discrimination impose challenges for this population (Islam et al., 2023).

Similarly, South Asians have been shown to be more susceptible to developing anxiety and depressive disorders. With one in five South Asians experiencing a mood or anxiety disorder, mental health is a critical challenge that many face and continue to leave unaddressed (*Mental Health Facts - SAPHA*, n.d.). This community also persistently faces physical symptoms as indicators of psychological distress (*Mental Health Facts - SAPHA*, n.d.). As the mainstream healthcare model emphasizes physical symptoms over psychological symptoms, mental well-being is often disregarded. This is known as the somatization of stress and is common in collectivist communities as psychological difficulties are presented as somatic rather than depressive symptoms (Karasz et al., 2019; Lai & Surood, 2008). Somatization of stress is seen as an adverse health effect, and perpetuated by South Asian cultures that emphasize interdependence, an ideology that often favors the sacrifice of personal needs for others' interests. This relates to the comfortability that youth have in expressing their mental health concerns to their family members and how families manage the topic of mental well-being. Similarly, mental illness in South Asian culture is not only confined to the individual, but it also fosters feelings of shame and dishonor within families (Ali et al., 2021; Lai & Surood, 2008).

Among South Asian youth, levels of acculturation, feelings of discrimination, and high parental expectations and pressure can lead to increased mental health challenges (Karasz et al., 2019). High pressure coming from South Asian parents is commonly seen in families across the United States and is a heavy contributor to feelings of stress and anxiety (Karasz et al., 2019). Researchers found that one of the main sources of stress for youth is intergenerational conflict, specifically with academic pressure from parents (Islam et al., 2017). Intergenerational conflict and parent conflicts can also have adverse effects on one's developmental outcomes, as these events can be transmitted through familial bonds, psychosocial contexts, and cultural narratives (Isobel et al., 2019; Shah et al., 2024). Additionally, South Asian youth commonly experience difficulties in balancing "dual identities," causing mental health challenges to arise during critical periods of development (Islam et al., 2017).

Another crucial topic to look at is how South Asian culture influences feelings surrounding sexuality. In many South Asian families, exploring sexuality is seen as taboo, especially for girls. Sexuality is seen as something to be repressed, leading to feelings of uncertainty and oppression. Silence around the topic of sexuality, especially during critical ages of development, reinforces cultural taboos as young women and girls are often encouraged to abstain from exploring their sexuality (Punjani et al., 2022). One study by Punjani et al (2022) emphasizes how cultural values, the silence around sexuality, and culturally embedded views of gender interact with girls' identity exploration. South Asian communities have reflected a specific sociocultural context that influences how sexuality is explored among youth, exacerbating any pre-existing patriarchal standards and norms through the development of sexual identities.

Similarly, the development of gender identities through a series of cultural gender expectations has profound impacts on mental well-being. South Asian cultures perpetuate patriarchal standards by encouraging traditional behaviors and roles for males and females. Traditionally, men are taught to suppress their emotions and feelings, sustaining patriarchal gender expectations that men must be strong and in control (Arora et al., 2016; Sohal, 2023). Parallelly, women face concurrent expectations in that they are more susceptible to instability and shame. Young women and men are both held to certain gendered expectations, fostering stress and anxiety for individuals to conform to their supposed roles. Through the exposure of patriarchal gender expectations placed upon developing youth, there is a significant stigma placed on help-seeking trajectories. Arora et al (2016) explain how men are less receptive than women to professional psychological help-seeking, due to the strong emphasis placed on their self-resilience and resistance to emotion and pain. With South Asian cultures exacerbating patriarchal norms for both men and women, youth are susceptible to facing mental challenges in their struggle to find stability.

This research answers the question, "What are the behaviors and perceptions surrounding the mental health of UC San Diego students who are South Asian?" Exploring behaviors and perceptions surrounding mental well-being for this community is critical for addressing the ongoing present and future health implications of cultural attitudes. With cultural perceptions having a significant influence on student

perceptions and behaviors surrounding mental health, researching the extent of cultural stigma is important to discover health implications. This study emphasizes the need for culturally appropriate mental health interventions among South Asian communities, especially for young adults who are susceptible to experiencing various mental health challenges.

Methods

This study surveyed 148 UC San Diego students who are South Asian. This mixed-methods survey was implemented through an online Qualtrics platform and collected qualitative and quantitative data for 10 days. Participants were recruited through forms of public engagement such as social media and flyers on campus and incentivized with a gift card for each participant, funded by the TRELS program. This survey asked questions such as the family history of mental health, utilization of college campus resources, coping methods, comfort levels with discussing mental health with family, perceived stigma, the influence of family dynamics on mental well-being, and self-perceptions surrounding mental health.

Results

Demographics

In the sample of 148 South Asian students at UC San Diego, 69% were female and 30% male. Students aged 18 years old were 30% of the sample, 30% were 19 years old, 11% were 20 years old, 12% were 21 years old, and 16% were 22 or older. The class standings of the students included 27% of the participants being freshmen, 31% being sophomores, 16% being juniors, and 25% being seniors. Next, 90% of the students were of Indian heritage, 4% from Pakistan, 4% from Bangladesh, and 2% from other South Asian heritages. Lastly, the immigration status of the participants showed 35% of the students as first generation (they immigrated here or are international students), 57% as second generation (their parent/s immigrated here), and 7% as third generation (their grandparent/s immigrated here).

Behaviors

As this study aims to identify behaviors surrounding mental health for South Asian college students, the results included various habits and practices that influence students' mental well-being. First, it was found that 80% of students procrastinate more than often, reporting their study habits as ranging from moderate to poor. When students were asked whether they worked or not, 66% reported that they don't work a job and 23% of students reported that they do have a job. Next, 21% of students sleep 8 hours or more each night, 68% of the students sleep 6-7 hours/night, and 11% sleep 4-5 hours/night. It was discovered that 74% of students have never accessed UCSD mental health resources such as CAPS (Counseling and Psychological Services), 16% rarely utilize CAPS, and 10% of students frequently or occasionally access CAPS (Figure 1). Similarly, 13% of students would never go to therapy, 65% would have to think about it, and 22% would definitely attend or have been to therapy (Figure 2). It was shown that 32% of students frequently or very frequently maintain cultural or religious traditions at UCSD, 38% of students sometimes maintain traditions, 22% rarely do, and 8% do not maintain cultural or religious traditions at all. Lastly, examining coping methods for stress showed that 31% of students participated in athletics, 14% drink alcohol, 11% used cannabis, 52% exercise, 61% engaged in a hobby, 11% meditate, 84% spend time with family and friends, and 45% undereat or overeat, to cope with stress. Other coping methods included reading, sleeping, music, shopping, watching pornography, and internet scrolling.

Figure 1:
Utilization of UCSD Counseling and Psychological Services

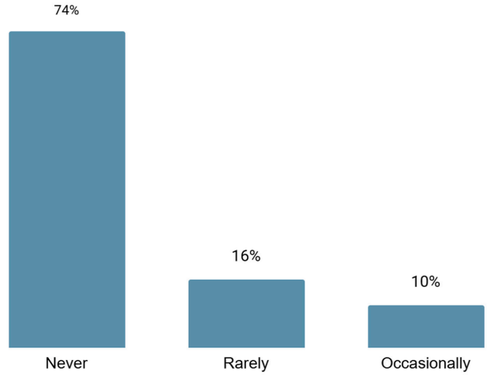
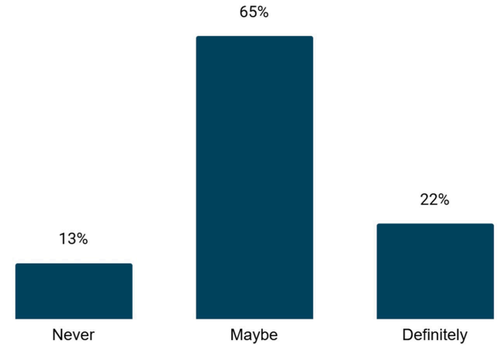


Figure 2:
Consideration of Attending Therapy



This study found that 26.35% of students have a family member with a current mental health challenge, and 29.73% of students have a family member who was previously diagnosed, meaning that they previously were diagnosed with a mental health issue but do not currently face this. Next, 16.22% of students are currently diagnosed with a mental health challenge, and 18.24% of students were previously diagnosed. Out of those who have a family member who is currently diagnosed, 79% of them also selected that their family member was diagnosed in the past. Out of the students who face a current challenge, 71% of them were previously diagnosed.

Self Perceptions

The next section of the results will cover perceptions surrounding mental health, including self-perceptions, family and community influences, stereotyping, and gendered differences. First, 16% of students perceived their mental health as poor or very poor, 45% reported neutral mental health, 34% reported good mental health, and 5% reported excellent mental health (Figure 3). When asked about depressive symptoms over the last 7 days, 63% reported that they don't feel depressed at all, 30% reported feeling depressed several days or more each week, and 7% reported feeling depressed nearly daily. When asked about feeling hopeless, 55% of students reported 'never,' 39% reported hopelessness for several days or more, and 6% felt hopeless nearly daily. Next, 24% of students did not feel nervous or anxious at all, 60% of the students felt nervous or anxious several days or more, and 16% felt anxious nearly every day. Examining stress levels indicated that 14% of students did not feel any stress, 63% of students felt stressed several days or more, and 23% of students felt stressed nearly every day (Figure 4). Of those who frequently participate in cultural/ religious traditions, 5% of students reported 'poor' mental health, and with extremely frequent active participation in cultural or religious activity, no students reported poor mental health.

Figure 3:
Self-Perception of Mental Health

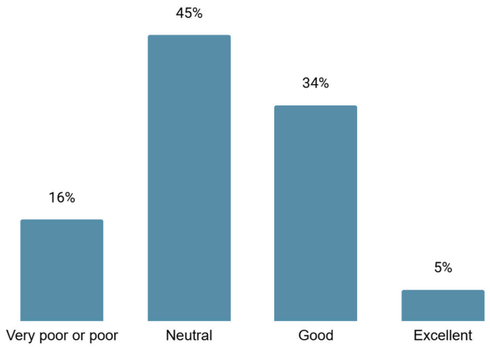
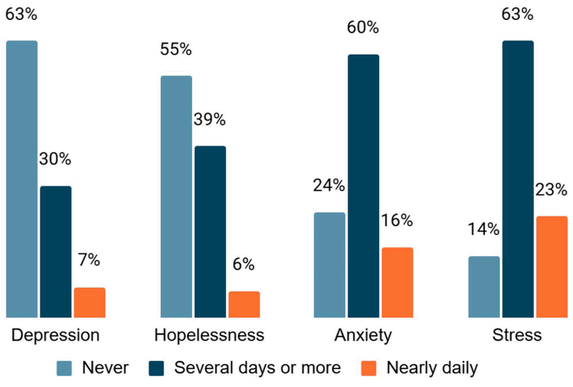


Figure 4:
Feelings of Depression, Hopelessness, Anxiety, and Stress in One Week



Family and Community Influences

Next, there are various family and community influences on perceptions surrounding mental well-being. Within the sample, 93% of the students believe that there is a stigma surrounding mental health in South Asian culture. This study also examined how often students discuss their mental health with family members, finding that 12% of students frequently talk about their mental health with family, 45% sometimes do, and 43% of students rarely or never discuss this topic. Similarly, 8% of students are 'very comfortable' talking about their mental health with family members, 23% are 'mostly' comfortable, 20% are 'neither comfortable or uncomfortable,' 31% are 'slightly uncomfortable,' and 18% of students would never mention their mental well-being to a family member as it is extremely uncomfortable. When students were asked how much their family dynamics influence the state of their mental well-being, including feelings of stress, depression, and anxiety, 11% reported no influence, 22% reported slight influence, 31% reported a moderate amount of family influence, 29% reported a significant influence, and 7% reported an extreme influence of family dynamics on their state of mental well-being. Family expectations regarding academic pressure or choice of career were also examined which found that 6% of students experience no pressure, 12% experience slight pressure, 36% experience moderate pressure, 34% experience a lot of pressure, and 11% experience extreme pressure from their family on their academic success and/ or career path. Of those who were diagnosed with a mental health issue in the past, 50% report a significant or extreme influence of family dynamics on individual well-being. Of those who reported a family member with a current diagnosis, 58% reported a significant or extreme influence of their family dynamics on their mental well-being. Of the students who feel extreme pressure from their families or communities, 88% feel anxious, and 94% feel stressed more than several days each week (Figure 5). Among the first generation, 46% were slightly or more uncomfortable discussing their mental well-being with family. Among the second generation, 54% were slightly or more uncomfortable discussing mental health, and 30% of the third generation were slightly or more uncomfortable. Among those who experience extreme family or community expectations, 71% never speak about mental health with their family, and none of this group is comfortable' discussing this topic.

Figure 5:
Students with Feelings of Anxiety and Stress More than Several Days a Week Among Those that Experience Extreme Family Pressure

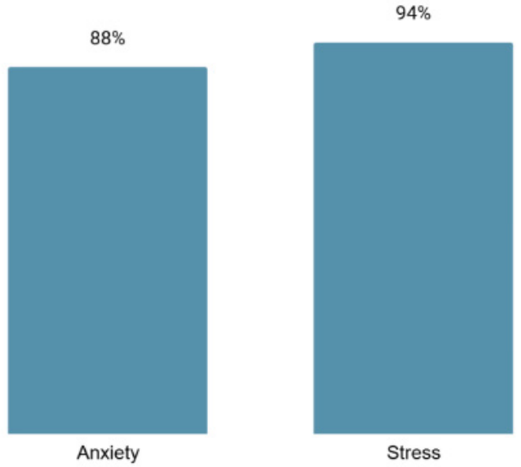
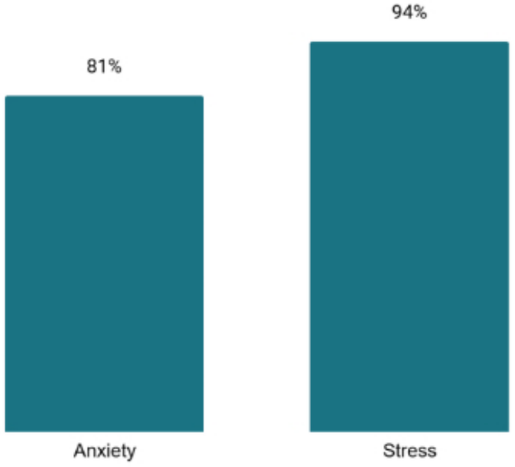


Figure 6:
Students with Feelings of Anxiety and Stress More than Several Days a Week are Among Those Who Frequently Experience Academic Stereotyping



Stereotyping

Another section within mental health includes South Asian college students' experiences of stereotyping. Among the sample, 71% of students experience academic stereotyping sometimes or more. Additionally, 81% of those who frequently experience stereotyping feel anxious more than several days a week, and 94% of those who frequently experience stereotyping also feel stressed more than several days a week (Figure 6).

Sex Differences

Of those who would never go to therapy, 56% were male and 44% were female. Among those who would possibly go, 31% were male and 69% were female. Among those who would definitely go or have been to therapy, 11% were male and 85% were female (Figure 7). Next, examining comfort levels discussing mental well-being with family members, related to biological sex, showed that out of those who were not comfortable sharing their feelings surrounding mental health, 33% were male and 67% were female. Among those who were slightly uncomfortable, the results showed 26% male and 72% female. Among those who are mostly comfortable discussing their mental health, 19% were male and 81% were female (Figure 8).

Figure 7:
Consideration of Attending Therapy by Sex

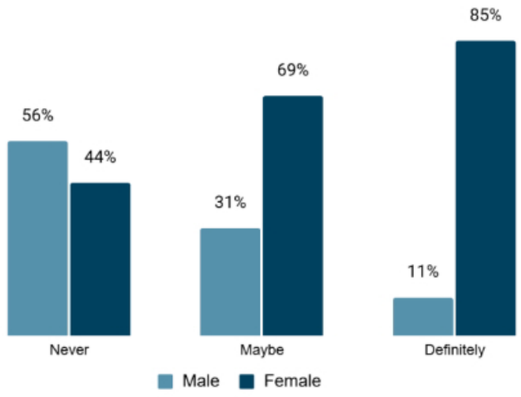
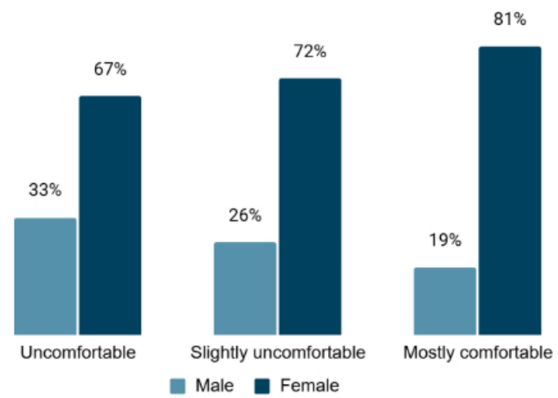


Figure 8:
Feelings Surrounding Discussing Mental Health with Family by Sex



Experiences and Perceptions of Mental Health: Qualitative Insights

When asked if students experience stressful dynamics, responses had various themes such as parental pressures and expectations regarding academic performance, dysfunctional families and frequent conflicts, health concerns, and strenuous relationships. Regarding sexuality and gender identity, students reflected themes including a lack of understanding or openness to LGBTQ, expected gender roles and stereotypes, struggles for acceptance, and an overall cultural stigma surrounding sexuality.

Participants felt various stressful family dynamics:

"Expectations in dating and marriage"

"Academic pressures and opinions on how to live"

"Lots of fighting, anger issues, generational trauma, undiscussed power imbalance"

"My parents have very high expectations and standards about me going into Data Science as a field, and have unrealistically expected me to perform the best in class. Whenever I come home, it kinda feels like I'm being a burden to them because I always get negative comments about whatever I'm doing at home, not sure what the stigma rose from"

"I think the most stress comes from the fact that some family members won't address their mental health issues and it puts a lot of stress on me"

Participants felt that their sexuality or gender identity influenced their mental health within the South Asian community:

"As a woman, I think I am expected to be constantly emotionally healthy, like a safe haven for everyone else. And I feel like I cannot talk about how women feel emotions differently. I'm not able to showcase my true sexuality to anyone in my south asian community"

"I think that being bisexual is hard because a lot of them don't understand it. My grandparents are not very understanding of gay but they can get it a little but even my parents don't understand what bisexuality is they just see it as "confused""

"It's isolating being lgbt in my family because even though i have queer relatives we are all very private about our identities"

"I believe my identity as a male presents the typical stereotypes of having to be strong and brave, not really allowing for much discussion of mental health impacting me"

"Sexuality and gender identity has made me feel non-included in the community. Makes me feel like an outsider"

"Being queer means that there will always be a significant part of your life that you have to hide from your family and your community, which can be isolating. In addition, you have to choose between being yourself or having a family"

Discussion

Several key findings of this study related to various behaviors and perceptions that students engaged in, and how they further our understanding of cultural stigma. Some behaviors included coping methods, help-seeking trajectories, and discussion of mental well-being with families. Some perceptions included self-perceptions of mental well-being, perceived effectiveness of coping mechanisms, the influence of family dynamics and expectations on students' mental state, and stigma surrounding sexuality and gender identity. The majority of students felt anxious and stressed more than several days a week, showing how stress and anxiety are two of the largest challenges that this population is affected by. Analyzing the participation in religious activity with perceived mental health opens discussion of the relationship between religion and mental well-being. Additionally, most believed that their coping mechanisms for stress were moderately effective. With almost all of the participants perceiving stigma surrounding mental health in South Asian cultures, it is proven that there is a significant stigma to be disentangled. A large number of students never or rarely discuss their mental well-being with family or are uncomfortable with it, despite frequent feelings of stress, anxiety, and feelings of poor mental health, showing critical evidence of the stigma surrounding mental health.

The majority of students reported a moderate to significant influence of their family dynamics on their mental well-being, showing how important family dynamics are to one's emotional well-being. Additionally, family expectations and pressure are analyzed, with a large number of respondents agreeing that they experience moderate to extreme pressure from their families or communities regarding their academic success or career path. Excessive family and community pressure acts as a significant stressor for students, having negative impacts

on their mental wellbeing. Exacerbated by a lack of comfort surrounding the discussion this topic, students consistently reflect the strong influence of family dynamics on their self- perceptions of mental well-being. Students who experience a stressful dynamic or an uncomfortable space of discussion have higher rates of anxiety, stress, feelings of pressure, and poorer mental well-being. Similarly, students who experience a mental health diagnosis in the family report poorer mental health and a significant influence of their family dynamics affecting their mental well-being. The second generation, with immigrant parents, was found to have the highest rates of discomfort with discussing mental health, showing the profound impacts of acculturation, encompassing the transmission of intergenerational trauma and traditional cultural values. Lastly, analysis of family dynamics and mental well-being has reflected that family dynamics significantly influence one's perceived mental state.

Next, those with higher levels of experienced stereotyping also had higher frequencies of stress and anxiety each week, showing the impacts of stereotyping on mental well-being. Men had lower help-seeking trajectories than women. Additionally, more women than men felt comfortable sharing their mental health with family, and there were higher numbers of men who felt uncomfortable rather than comfortable with sharing these feelings, reflecting gender expectations surrounding the expression of emotions.

Responses about stressful family dynamics had a variety of themes, such as parental pressures regarding academic success, dysfunctionality and frequent conflicts, health concerns, and overall strenuous relationships. Examining the frequency of dysfunctional family dynamics and high expectations in South Asian families reflects how an individual's mental well-being can be extremely impacted by cultural norms and stigma. With South Asian college students attempting to balance various aspects of their cultures and lives, it is seen that difficult family dynamics have a significant impact on mental health.

Analyzing the data about sexuality and gender identities showed common themes including a lack of understanding or openness to LGBTQ+, expected gender roles and stereotypes, struggles for acceptance, and an overall cultural stigma surrounding the topic of sexuality. While these young adults strive to explore their sexual identities and have a comfortable space to be themselves around their families, they are unable to reveal their true selves, which can be very isolating. Additionally, conversations around expressing emotions for men and women are stigmatized, causing young adults to feel uncomfortable with this topic. These key themes indicate an extreme stigma surrounding sexuality and supposed gender norms in South Asian culture, furthering the taboo surrounding the exploration of one's sexuality and non-traditional gender expectations.

One of the strengths of this study was its mixed-methods approach, collecting both quantitative and qualitative data. Another strength is the sample size, as it collected data from 148 UCSD students. Another strength of this study was that it focused on numerous aspects of both behaviors and perceptions, allowing room for discussion on the multiple factors that contribute to mental well-being. One limitation was that this survey was implemented online, allowing room for possible misinterpretation of questions. Additionally, self-reported data may have been subjected to response biases, affecting the accuracy of responses.

Conclusion

This study sheds light on the existing stigma surrounding mental health in South Asian culture. Examining behaviors and perceptions such as help-seeking trajectories, current and past diagnoses, self-perceptions, family and community influences, and attitudes around gender and sexuality, have reflected significant impacts on the mental well-being of South Asian young adults. This study adds to preexisting literature on mental health among South Asian populations by focusing on college- aged students among various immigrant generations. Additionally, this research contributes to current knowledge of cultural stigmas, as it encompasses themes that have shown to have profound impacts on students' mental health, such as family pressures and dynamics, and sexuality and gender identities. This research incorporates many behaviors and perceptions of this specific vulnerable population, promoting a comprehensive and contributive understanding of mental health stigma in this culture. Acknowledging multiple aspects of students' behaviors and perceptions has shown that there are further culturally appropriate interventions needed to address the stigma in the South Asian community. With young adults susceptible to volatility in their mental well-being, it is important that cultural stigma is addressed, and this study can be used to support future inclusive strategies to ultimately destigmatize mental health in the South Asian community.

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Shivani Sharma

Biography

I am currently a second-year student studying Human Developmental Sciences with a Business minor. I'm involved in Flying Samaritans and Women in Business, and I aspire to become a transformative leader in the healthcare industry. I love painting, cooking, trying new restaurants, and enjoying the sun.

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"Meet me at Sungod": Using Photovoice to Understand Student Attachment to Public Open Space at UCSD

Researcher: Jarvis Tran | Advisor: Dr. Amy Lerner

Abstract

Public open spaces are important parts of the campus landscape and serve a variety of roles. Previous research has shown that certain characteristics of public space, such as greenery and places to gather, provide community building and well-being benefits for students. This project uses photovoice, a participatory research method, to understand the roles and meanings public open space has for some students at UCSD. Drawn from 10 interviews with students, elements which promote place attachment include: positive emotions, natural elements, social elements, and logistical elements. For students at UCSD, different spaces serve different functions, ranging from quiet, restorative spaces to popular, park-like spaces. Public open spaces at UCSD represent a unique type of space, which play a crucial role in the lives of students by providing meaningful spaces for students to destress and relax. Students showed attachment to these spaces, revealing deep bonds with the places they described in their interviews. Public open space on campus should not be evaluated simply by the number of students who use them. Smaller and quieter spaces hold deep meaning for students and contribute important mental health benefits. A variety of thoughtfully planned spaces should be included on college campuses to meet the diverse and varied needs of students.

Introduction

Public open spaces on college campuses facilitate a wide range of uses, ranging from transportation corridors and connectors to nodes and places for students to gather. Prior research has shown that public open spaces are important for students beyond their aesthetic value (Scholl and Gulwadi 2015). On university campuses with green spaces, students who frequently interacted with greenery reported higher quality of life and lower perceived stress (Holt et al. 2019). Public open spaces on campus can also have benefits for student learning and stress regulation. Natural landscapes on campuses can be learning spaces outside of the classroom and are shown to have "attention-restoring" benefits which help improve student learning and mental health (Scholl and Gulwadi 2015). Moreover, public open spaces on college campuses might function as "third places", areas outside of the home and work which allow students to engage in a wide variety of activity. These activities range from individualized, quiet, and passive usage (ex. studying alone, eating alone, resting in nature alone, etc.) to highly activated, group usages (ex. organized events, "hangouts", etc.) (Oldenburg 1989). Public open spaces could be important forms of third spaces on college campuses which help to generate a sense of community, which further promotes well-being and civic responsibility (Francis et al.

2012). Positive qualities associated with high quality public open spaces such as its potential role as a third place and greenery help to promote place attachment, the influential emotional and psychological relationships between people and places which affect mental well-being and community connectivity (Moulay et al. 2018; Najafi and Shariff 2011).

Spaces on campuses should be designed to serve the community as a whole and address the needs of a diverse student population. This is especially important in a very large and segmented college campus such as the University of California, San Diego (UCSD), which separates its undergraduate student body into distinct residential colleges. In recent years, the campus has experienced rapid development and urbanization. The construction of many more housing and academic buildings has placed increased pressure on existing campus public open spaces. At UCSD, open space on campus is an essential component of the campus landscape, playing many roles for students, including: creating a cohesive campus identity, serving as effective mobility corridors, and creating meaningful social spaces (UCSD Open Space Master Planning Study 2015). The campus has a variety of open space types, ranging from the historic eucalyptus grove to more formal quads and plazas. While departments and residential neighborhoods serve individual groups on campus, open public space is a shared resource for everyone.

Using UCSD students and the campus as a case study, this project studies student perceptions of public open spaces on the UCSD by employing qualitative photovoice methodology. Specifically, it seeks to answer: (1) What roles do public spaces play for students and are these spaces considered third spaces? (2) What characteristics of public space attract students and promote place attachment? Beginning to answer these questions will help to inform the design and type of spaces on college campuses and ensure that students are able to experience the health, wellbeing, and community generating benefits associated with high quality public open space. Using Oldenburg's (1989) ideas on third places as a framework, this project evaluates elements of space which allow it to provide the psychological and community building benefits and facilitate the place attachment process.

Literature Review

The "Third Place" and Place Attachment

Public open space plays important roles in urban environments, such as: providing places for recreation, activity, socialization, relaxation, and environmental engagement. These roles promote place attachment and create social ties within the community (Campbell et al. 2016). Previous work studying cities have long investigated specific elements of public space which facilitate social interaction and community building in urban environments (Jacobs 1961; Oldenburg 1989). Sociologist Ray Oldenburg coined the term "third place" to describe "a great variety of public places that host the regular, voluntary, and happily anticipated gatherings of individuals beyond the realms of home and work" (Oldenburg 1989, 16). These spaces act as informal gathering spaces in cities, where people can socialize with strangers from their community. Characteristics of public space, such as its potential role as a third space contribute to a deep and positive bonding between people and specific places. This form of bonding is termed "place attachment" by psychologists and sociologists, who have found that place attachment has the potential to encourage people to use public places further and spend more time outdoors, connect with their community, and promote general greater livability in urban environments (Moulay et al. 2018). Place attachment is deeply connected to personal meanings, emotion, and behavior, therefore, these deep bonds between people and places influence human behavior. This means that attachment to place can help generate positive civic behaviors which develop all aspects of a community: physical, social, political, and economic. Beloved public spaces which promote place attachment can motivate people to collectively protect and improve their communities and participate in local planning processes (Manzo and Perkins 2006). Moulay et al. (2018) proposes a theoretical model which illustrates the process of promoting place attachment and utilization of public spaces, calling on a combination of physical, social, and psychological factors. This includes: accessibility, proximity, aesthetic maintenance, (physical); mixed use, mixed incomes, commuting distance, free time, safety (social); and personal meanings, thoughts, behaviors, emotions, (psychological).

On college campuses, spaces such as quads, squares, and lawns may may create place attachment among students which improves student psychological well-being, promotes livability at UCSD's campus, and creates an engaged student body which engages with campus decision making processes.

Greenery and Health & Well-Being

Public open space also has benefits for human health and well-being. Specifically for college students, green open space on college campuses serves as places for learning and stress management. Natural landscapes on campuses are shown to have "attention-restoring" benefits which help to improve the ability of students to learn and improve mental health (Scholl and Gulwadi 2015). Other studies have also found that campus green spaces are essential for the overall mental health of college students (Liu et al. 2022). Students who frequently engage with green spaces, specifically in active ways, report higher quality of life, better overall mood, and lower perceived stress (Holt et al. 2019). Previous research on open space on campuses has focused primarily on the pedagogical and restorative effects of green spaces on college campuses (Holt et al. 2019; Lau et al. 2014; Scholl and Gulwadi 2015). For campuses seeking to promote both the mental and physical health of students, planners and designers can use the concept of healthy design, in which natural features are utilized to assist users in relaxation and restoration. A diverse range of open space elements and sizes should be included on campuses to maximize these benefits for students (Lau et al. 2014).

Methods

Photovoice Methodology

Photovoice methodology is a process for conducting participatory research in which participants use photography to identify their community's strengths and weaknesses. On the whole, the aim of participatory research to allow community members to reflect on and propose improvements for their communities, with a focus on working with participants rather than imposing research onto them (Wang and Burris 1997). This process allows participants to use their local knowledge to enhance their communities and reach decision makers. Participants discuss the meanings of their photos, highlighting strengths in their existing community and identifying areas of concern (Reese et al. 2020; Wang and Burris 1997). In this project, participants took photos of their "favorite public open space on campus" followed by an interview to discuss their thoughts on these spaces. The results of this project were presented to UCSD's Campus Planning office.

Site Context

This project studies student perceptions of public open spaces at UCSD. The campus is characterized by its sprawling and segmented nature. Eight distinct residential colleges make up the majority of the campus urban landscape, each with their own architectural styles, residence halls, dining halls, and community spaces. This means that the residents of each college are highly connected with their neighborhoods and spend much of their day within these spaces. The campus also is currently undergoing rapid urbanization with the construction of many more academic and residential buildings increasing the amount of developed space on campus, which increasingly places pressure on existing open space. Interspersed between UCSD's residential neighborhoods are a multitude of spaces shared by all members of the campus community regardless of the college they are associated with. These spaces include: lawns, quads/courtyards, walkways, amphitheaters, and hammock areas.

Participant Recruitment

Students were selected through convenience sampling (Creswell and Creswell 2023). Students who chose to participate in the study were compensated with a coffee or tea during interviews. A non-representative sample of 10 students participated in the project.

Photo Collection

Participants were asked to upload photos of a favorite public open space on campus through a Google Form (See Appendix B). Using their personal devices, participants were first asked to upload 1 photo of the space of their choice as a whole. They were then asked to upload 1-2 photos of specific characteristics within the space. Within the form, public open space was defined as to give guidance to participants. Participants were also asked to think about why the public open space they selected was their favorite and consider the feelings elicited when they are in the space.

For the purposes of this project, public open space is defined as any space that is not taken up by a building on the UCSD campus. This includes, but is not limited to: lawns, plazas, quads, squares, green space, walkways, etc. This working definition reflects the lack of consensus within existing research on the definition of public open space, which mainly conceptualizes it as open and green space, with less attention given to other types of public open spaces such as plazas and other forms of more "constructed" and built spaces (Koohsari et al. 2015). To mitigate this variability in defining public open space, the definition given to participants was intentionally left open ended as to encourage different interpretations and reveal personal meanings.

Participant Interviews

Participants were interviewed in-person over coffee or tea, after uploading their photos. The uploaded photos were printed out and brought to the interview for reference. Interviews were recorded using Apple Voice Memos and notes were taken by-hand in a notebook. Building on prior research utilizing photovoice interview methodology, the questions asked in the interview were semi-structured (see Appendix A) and intended to obtain data about: (1) Why did students choose these photos? (2) What students did in these public open spaces? (3) If there was anything they might change about the space? At the end of the interview, students were also asked to discuss anything they might want to add about the public open space they chose.

Data Analysis

Student responses to their chosen public open spaces formed the basis of findings and were identified through their answers to interview questions. After manually transcribing recorded interviews, data was analyzed using Atlas.ti, a qualitative data analysis software, to code and identify quotations discussing key themes and trends within the interview data.

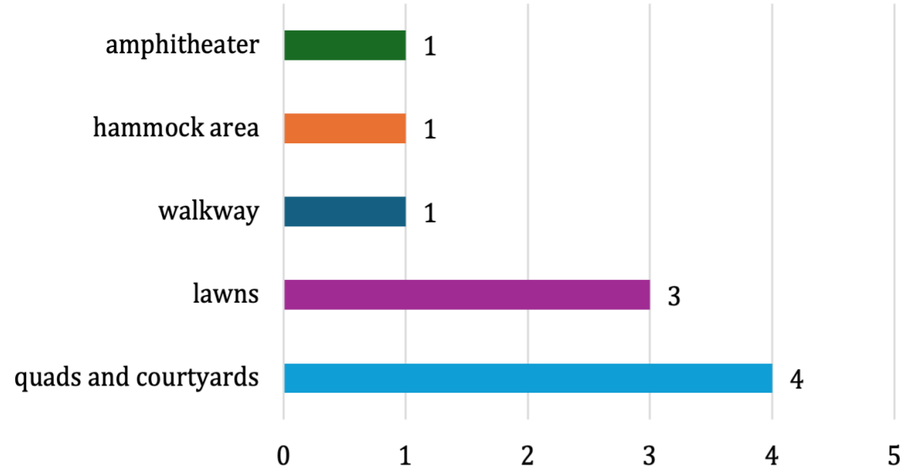
Results

Ten students participated in the project, each uploading 2-3 pictures and taking part in a 10 minute in-person interview. A total of 28 pictures of public open spaces were collected. The public open spaces identified by students as their favorite were: Sungod Lawn, Matthews Quad, Muir Quad, WongAvery Library Quad, Center Hall Courtyard, Eleanor Roosevelt College Walkway, Old Student Center Hammocks, and Epstein Family Amphitheater.

Typology of Spaces

The public open spaces identified by students can be classified into 5 categories: lawns, quads/courtyards, walkways, hammock areas, and amphitheater. Chart 1 shows the categories of public open space at UCSD and the number of students which identified each as their favorite. The category of public open spaces most commonly identified by students were quads/courtyards and lawns. The only public open space identified commonly by multiple students in this project was Sungod Lawn, a very large and iconic open space located in the center of campus.

Chart 1:
Types of Public Open Space at UCSD Identified by Students as "Their Favorite" at UCSD, by # of Students Identifying



Roles of Spaces

When asked about what brought students to these public open spaces, students revealed the wide variety of roles these spaces played in their lives. Many of these spaces in this project played multiple roles for students, including: a place to *destress/privacy, a pathway/corridor, a place for events, and a place to hang out.* Chart 2 shows the roles public open space plays for students at UCSD and the number of students which identified each role. Students most commonly identified public open spaces as a place to destress and a place for privacy. Table 1 shows each public open space identified by students and the roles students identified these spaces play.

Chart 2:
Roles Public Open Space Serves for Students at UCSD, by # of Students Identifying

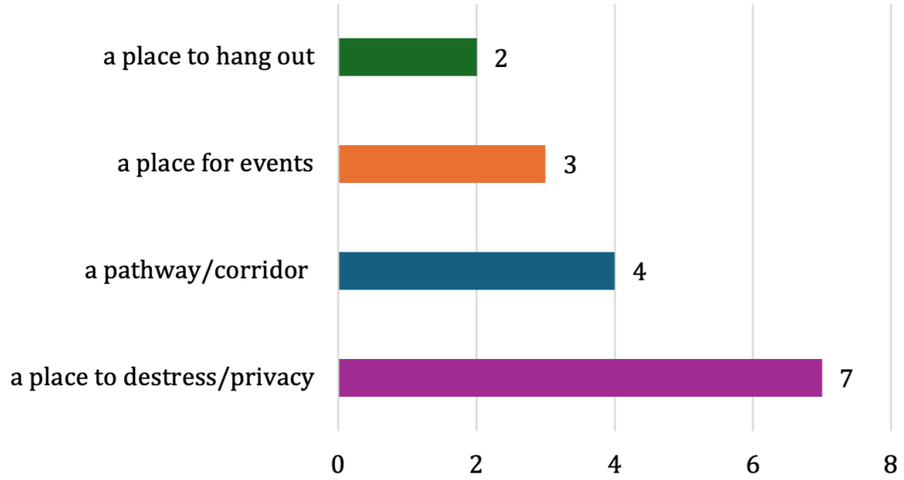


Table 1:
Negative themes of public open space at UCSD identified by students.

Location	A Place to Hang Out	A Place for Events	A Pathway / Corridor	A Place to Destress / Privacy
Sun God Lawn	x	x		x
Matthews Quad			x	x
Muir Quad			x	x
WongAvery Library Quad			x	
Center Hall Courtyard				x
Eleanor Roosevelt College Walkway			x	
Old Student Center Hammocks				x
Epstein Family Amphitheater		x		

A PLACE TO DESTRESS/PRIVACY

Student participants most commonly discussed how some public open spaces at UCSD serve as places to decompress and relax outside of the classroom. Specific elements of design in these spaces give students a sense of privacy and seclusion away from the rest of the busy campus. Students frequently attributed these spaces with a sense of calm.

Figure 1:
Students discuss spaces as a place to destress with a sense of privacy.

"I like that you, kind of like, especially on the hill, you are shielded from the major walkways. Even when people are walking by you don't really see that or perceive that, so it makes you feel like more private and less like in a fishbowl."

"Definitely, calm and um, maybe like secure. Just because this is one of those few open spaces that are a little enclosed. And so there's like a sense of privacy. And I don't feel overwhelmed. So the opposite of overwhelmed."

A PATHWAY/CORRIDOR

Some student participants noted that they used public open spaces as a pathway or corridor for traveling throughout campus. For some students, their favorite public open spaces exclusively serve as a pathway, rather than a space where they spend an extended amount of time. Some students used these spaces as a pathway due to their convenient location (e.g. Matthews Quad), while for others, they explicitly sought out these pathways due to certain positive characteristics (e.g. ERC pathway).

Figure 2:
Students discuss spaces as a pathway or corridor.

"And also it's in between Price Center and things in Warren, there's like perfect pathways to cut across, which makes it easier to get to Pepper Canyon."

"This photo is when you walk into ERC where all the residential buildings are, they're shaped kind of like archways and there's a pathway that goes all the way through. I took this photo because it's my favorite walkway to go down. Everytime I'm walking, say like, between Sixth and Seventh or something, I just make a detour into ERC and walk through there."

A PLACE FOR EVENTS

For some students, the main draw of certain public open spaces is that they serve as places for events, held by either university administration or student organizations. Some public open spaces (e.g. the Epstein Family Amphitheater) almost exclusively serve as event spaces, while others (e.g. Sungod Lawn) serve as event spaces alongside other roles.

Figure 3:
Students discuss spaces as a place for events.

"The most memorable one is the most recent one, which was the Undercurrent concert. Um, there were two bands performing and I got there pretty early so I got a seat near the front. Yeah, it was nice. Also, just the farmers market in general."

"If I'm there for a protest like I noticed a lot of student groups hold protests there, I wouldn't say calm, I would say alert and anxious, but also energized."

A PLACE TO HANG OUT

Lastly, some public open spaces discussed in the project are used by students to "hang out" and socialize with friends. While some spaces clearly were designed to be used alone for students to enjoy the restorative effects of green space, others, such as Sun God Lawn, are frequently used by students to spend time with friends..

Figure 4:
Students discuss spaces as a place to hang out.

"I guess one time in particular was when I went there with like [X] and another one of our friends and they both play guitar and we had a little picnic."

"I really like Sungod lawn because, especially when everyone is hanging out there. I feel like it's a good hang out spot for people who want to chill in between classes."

Participant Identified Themes

In the interview phase, participants were asked to discuss the photos they chose to include in the project. Participant responses to these questions can be divided into 8 themes. Of these 8 themes, 5 were *positive elements*, and 3 were *negative elements*. *Positive elements* include: positive emotions, natural elements, social elements, constructed elements, and logistical elements. *Negative elements* include: lack of name/underappreciation, uncertain permissions, and lack of constructed elements. Table 2 lists the public open spaces identified by students and positive themes they discussed. Table 3 lists the public open spaces identified by students and negative themes they discussed.

Table 2:
Positive themes of public open space at UCSD identified by students.

Location	Logistical Elements	Constructed Elements	Social Elements	Natural Elements	Positive Emotions
Sun God Lawn	X		X	X	X
Matthews Quad	X	X	X	X	X
Muir Quad	X	X		X	
WongAvery Library Quad		X			
Center Hall Courtyard		X		X	X
Eleanor Roosevelt College Walkway		X	X		X
Old Student Center Hammocks		X		X	X
Epstein Family Amphitheater		X	X	X	

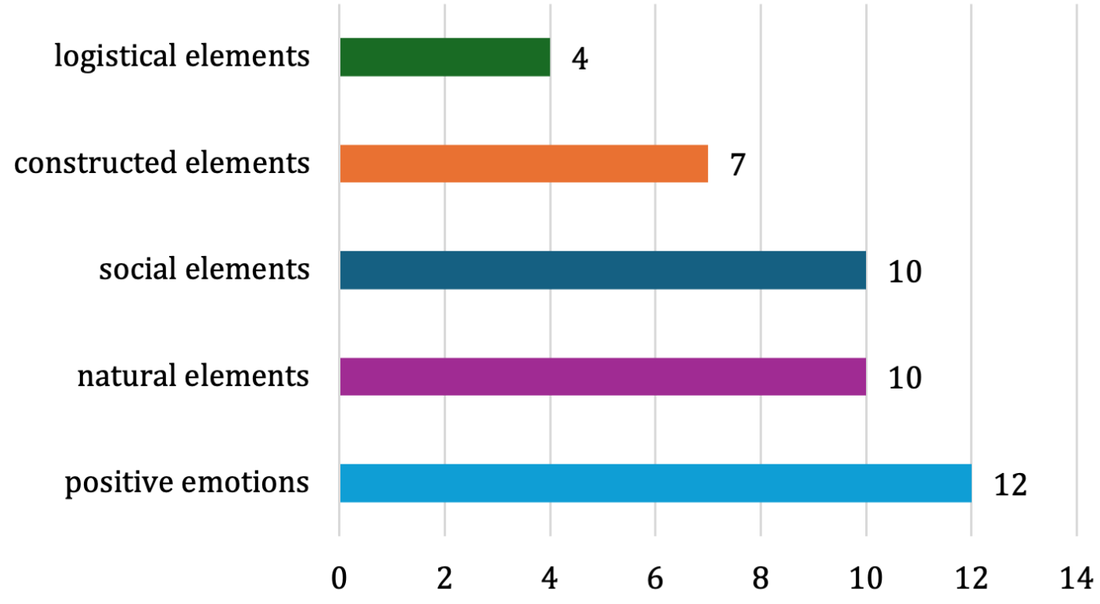
Table 3:
Negative themes of public open space at UCSD identified by students.

Location	Lack of constructed elements	Uncertain permissions	Lack of name/ underappreciation
Sun God Lawn			
Matthews Quad			X
Muir Quad	X		
WongAvery Library Quad			
Center Hall Courtyard			X
Eleanor Roosevelt College Walkway	X		
Old Student Center Hammocks		X	X
Epstein Family Amphitheater		X	

Positive Elements

Student participants were asked to take photos of 1–2 specific characteristics within the space they selected. All 10 participants of the project chose to include photos of elements they deemed to be positive, that is, elements that are essential to the space in some way and contributes positively to user experience. Positive elements encourage new users to visit the space and facilitate repeat use from existing users. These positive elements can be broken down into 5 categories: constructed elements, natural elements, logistical elements, social elements, and positive emotions. Chart 3 lists these elements and how frequently they were mentioned by students.

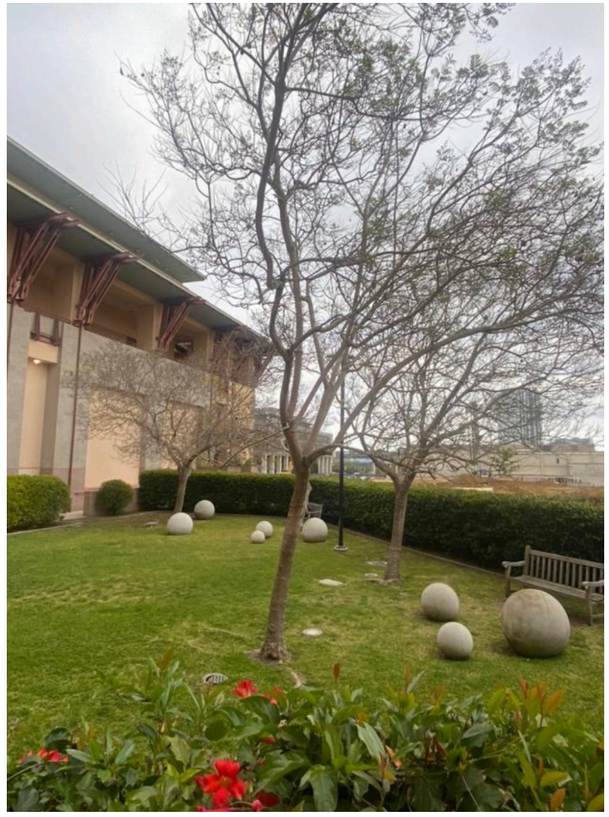
Chart 3:
Positive Elements of Public Open Space at UCSD, by # of Times Mentioned by Students



POSITIVE EMOTIONS

The most discussed positive element by student participants were the positive emotions associated with being in and interacting with the public open spaces students identified. The positive emotions most commonly discussed by students were feelings of *calmness*, *safety*, *happiness*, and *community.*

Figure 5:
Students discuss positive emotions from being in some spaces.



"I feel like going down the steps to the area it feels like I'm entering another world. I feel like the sound blocking is really good. There's like buildings basically all around except the entrance. You go from really loud to really quiet. And I don't know, it feels like magical almost. Sitting among the grass and stone feels really peaceful and calm and I like that."

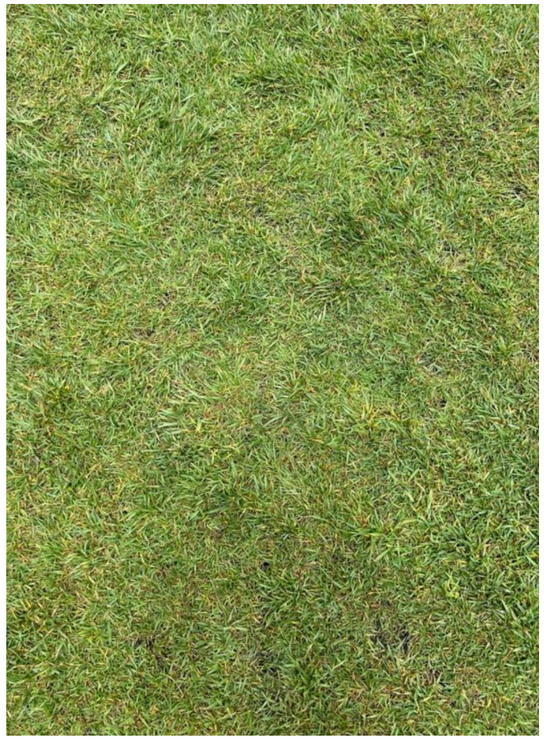
"It's very...Its feels, I don't know, it disconnects from Ridgewalk and I feel really safe in the space. So, I like it because there's people traveling by so it's like I'm not alone. But it's also separated enough so I do feel, I'm in my own space. Does that make sense? Not alone, alone."

NATURAL ELEMENTS

Students frequently identified natural elements as contributing heavily to the positive emotions felt when within public open spaces at UCSD. These natural elements include: *greenery* (in the form of trees, shrubs, grass, and other vegetation) and *sun. Greenery* and sun seem to be highly connected, with some students noting that these two elements combine to create a very positive, overall experience. Multiple students focused highly on the characteristic of grass specifically, discussing Its importance for certain spaces.

Figure 6:
Students discuss natural elements in spaces.

"But these trees specifically, I really like to lay down and look at them and look at how they sway in the wind. I love these trees, specifically when they sway in the wind. I think it's really peaceful and relaxing."

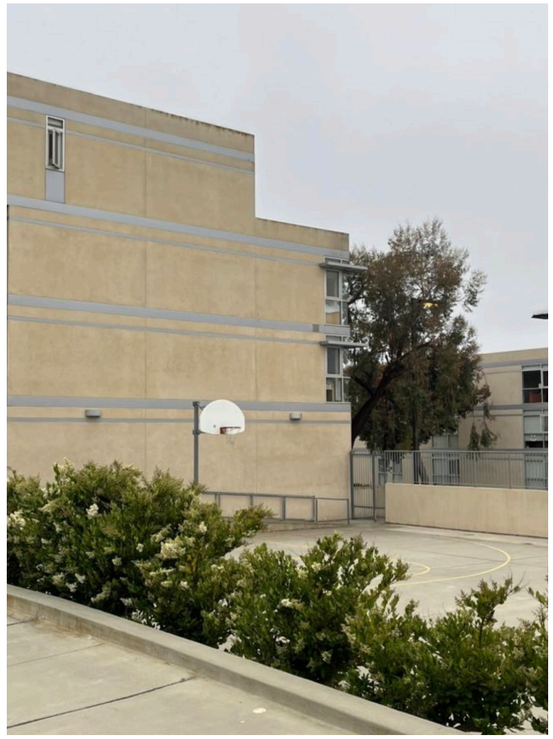


"I took a picture of it because that's where I'm sitting when I'm taking a nap or hanging out with friends or something. Typically, I know the grass isn't very good for the environment because it's high maintenance and there's a lot of water usage. But I do kind of like it in this scenario because you can just sit there and it's like hills and stuff so when you're leaning back on it you have something to lean on and it's not flat. And then, yeah, like it's just grass. But it's just comfortable. Like would you rather sit on grass or would you rather sit on concrete. Like I would rather sit on grass. It's like cushiony."

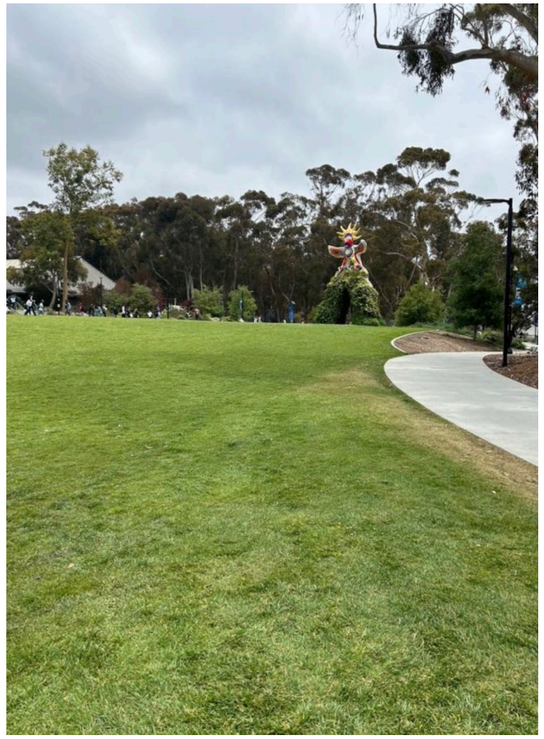
SOCIAL ELEMENTS

Student participants also frequently identified social elements as being one the main reasons they visited and stayed within the public open spaces they selected. Social elements discussed by participants include: *activity/people watching, broad name recognition, and socialization. Activity/people* watching refers to the act of observing the behavior and actions of others using the space alongside the participant. Participants frequently identified other activities occurring in public open spaces as providing a sense of community. *Broad name recognition* is a trend within the project in which some students noted that spaces which are named and are "iconic" in some way seem to attract greater popularity and use. *Socialization* refers to students interacting with friends and others within the space ("hanging out"), using the space in a social way.

Figure 7:
Students discuss the social elements in spaces.



"The basketball court is really fun. Just because it's right outside of the dorms. And again, when you are walking through and you see like a bunch of people playing and also just at night it's really pretty. It reminds me of like, you know how in Hong Kong, it's like the apartment buildings and they have the courts just there' Gorgeous. Except for with this it's just like, it makes it feel like there's more community because there's always people hanging around the courts and what not."



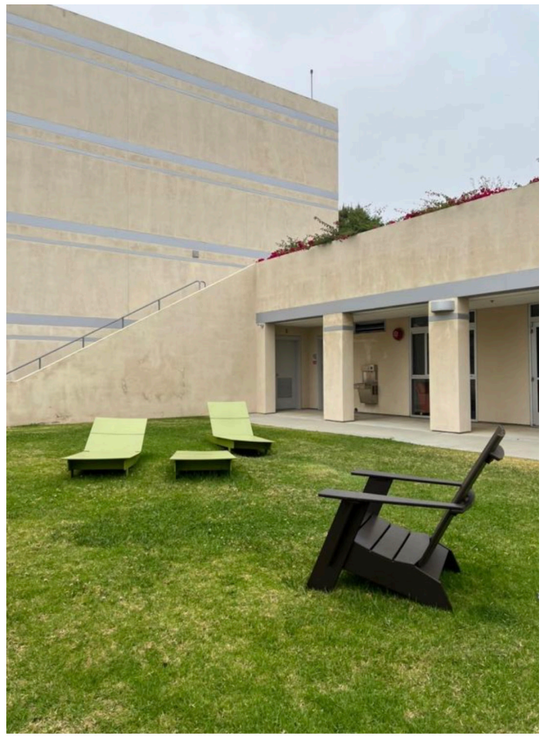
"The statue is pretty iconic. You see a picture of that and you know it's UCSD. I feel like it sets up the field to be better. It's like "where you do wanna meet?" and it's like "Sungod". You immediately know it's the fucking, evil statue. Cause like having a name gives people a sense of direction and that helps them get around better. "

CONSTRUCTED ELEMENTS

Students sometimes mentioned constructed elements as a main contributor to the positive experiences they felt within these spaces. The two main types of constructed elements are: *seating* and *enclosure.* Seating can be a wide variety of human-made objects which give users a place to rest and sit. Almost all the spaces selected by participants in this project included seating, however, only some participants identified it as a main positive element. *Enclosure* refers to the design of some public open spaces in which buildings almost surround and close in a space, such as a courtyard. Participants who identified *enclosure* also pointed out the positive emotions (*safety* and *calmness*) elicited from an enclosed space.

Figure 8:
Students discuss the *constructed elements* of spaces.

"It's a line of concrete, I wouldn't call it a path. I think it's to step, the lawn. So it kind of turns the lawn into steps or kind of like beds. It's what I was sitting on. I thought it was pretty 'cause there were leaves on it. I like it, it's a good place to sit."

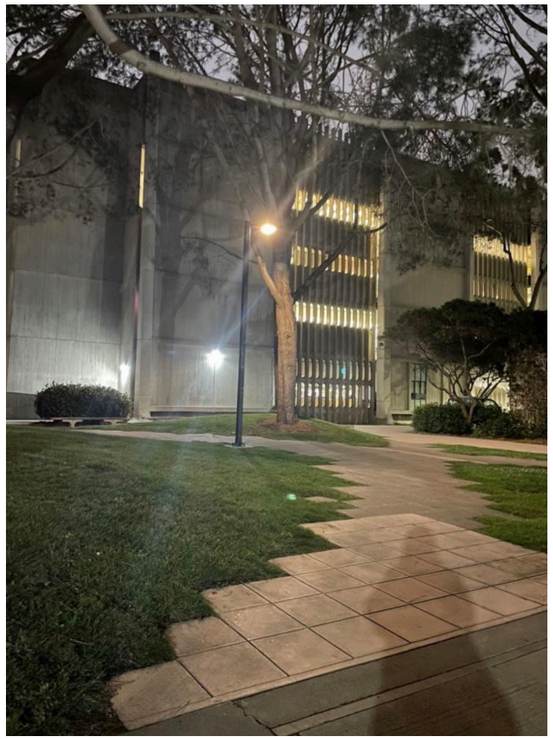


"I think it's just important to have like smaller, enclosed spaces like this that I guess are transitional. Not every open space has to be a huge lawn where you sit. I think open space can take on many forms."

LOGISTICAL ELEMENTS

Lastly, some student participants noted that logistical elements contributed to their positive experiences in these spaces. Logistical elements include: the space's *location* and the presence of *pathways* and *other infrastructure*. The *location* of the space and its proximity to other uses makes it easy for existing users to return and makes it more likely for new users to naturally encounter these spaces. In particular, location of spaces relative to classrooms encourages use. The presence of *pathways* and *other infrastructure* allows a space to serve multiple functions. *Pathways* make it possible for a space to serve as a corridor, while other forms of constructed elements such as tables and chairs allow students to do work or socialize with friends.

Figure 9:
Students discuss the *logistical elements* of spaces.



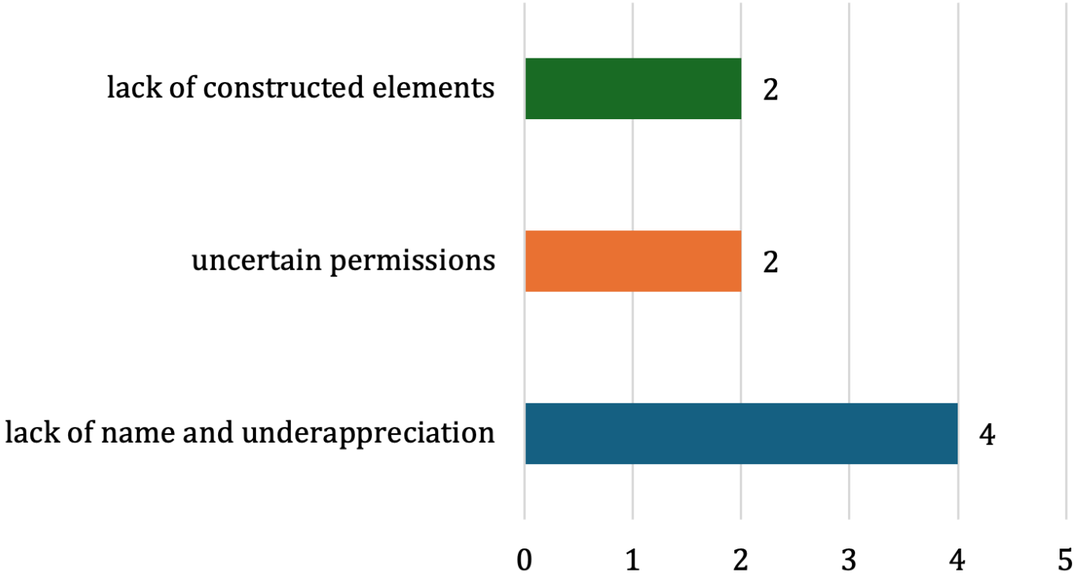
"[I visit] Pretty often, maybe three times a week because my classes are in Muir. Um, so yeah, pretty often."

"I like other lawns on campus too but Sungod is very central, it's like close to where [Y] lives, usually I'm with other people so it's like an easy meeting point."

Negative Elements

While all participants identified positive elements within the public open spaces they selected, some participants also identified negative elements within these spaces. Negative elements discourage new users from visiting certain spaces and limit what existing users can do in these spaces. These negative elements can be sorted into 3 categories: *lack of name/underappreciation*, *uncertain permissions*, and *lack of constructed elements*. Chart 4 lists these elements and how frequently they were mentioned by students.

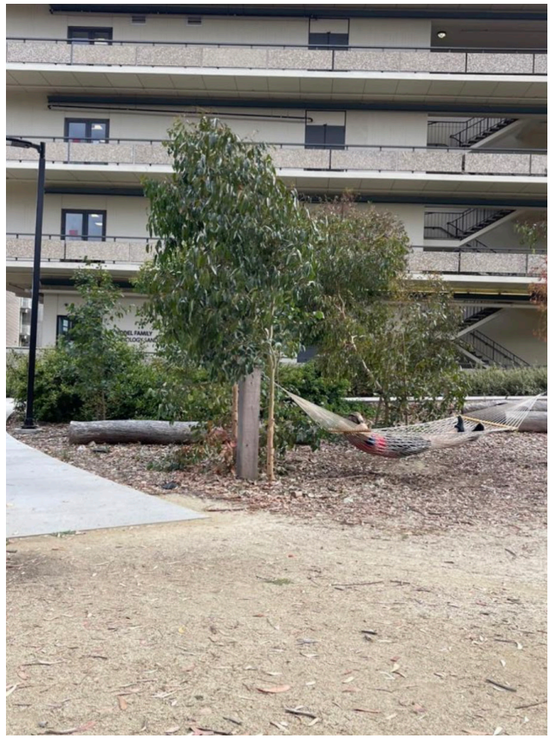
Chart 4:
Negative Elements of Public Open Space at UCSD, by # of Times Mentioned by Students



LACK OF NAME AND UNDERAPPRECIATION

The most discussed negative element by student participants is a *lack of name and under-appreciation* of the spaces they selected. Some of these spaces (i.e. the Center Hall Courtyard and Old Student Center Hammocks) lack an official or community given name. When discussing these spaces, students often describe the surrounding buildings and specific characteristics within them, rather than using a broadly recognized name for the space such as the case for Sungod Lawn and Matthews Quad. Spaces without a name are often forgotten or overlooked by the student body as a whole. However, this also means that these spaces provide benefits to users which are impossible to attain from a popular and busy space. Participants often note that these spaces are *quiet* and *peaceful* due to their isolated and forgotten nature. Participants recognize this tension, enjoying the solitude while at the same time wanting to share their favorite spaces with others.

Figure 10:
Students discuss the lack of name and underappreciation of spaces.



"I think definitely giving it a name would make it better. So people know what it is. Where it is. So people have a sense of ownership, so it's easier for others to share that this space is provided for us."

"I feel like it's definitely underutilized. I wish more people knew about it because I think it's great for grad photos for example. Or like small picnics or little events. But at the same time, I don't wanna say that because then people are gonna start swarming. I think how calm and not busy it is is what makes it beautiful. So I wouldn't want to ruin that. But I think it should be appreciated more by students here."

UNCERTAIN PERMISSIONS

Students also discussed *uncertain permissions* as barriers to the use and enjoyment of certain spaces. Students who noted uncertain permissions discussed confusion about whether they were allowed to enter and use these spaces, a discouraging factor which likely turns away students who are unwilling to risk the potential consequences. Spaces strongly associated with events (i.e. the Epstein Family Amphitheater) are most likely to face this issue. Additionally, lack of usage by fellow students also seems to discourage use. *Underappreciated spaces* (i.e. the Old Student Center Hammocks) with low student use initially discouraged the student which selected it from using the space.

Figure 11:
Students discuss the *uncertain permissions* of spaces.

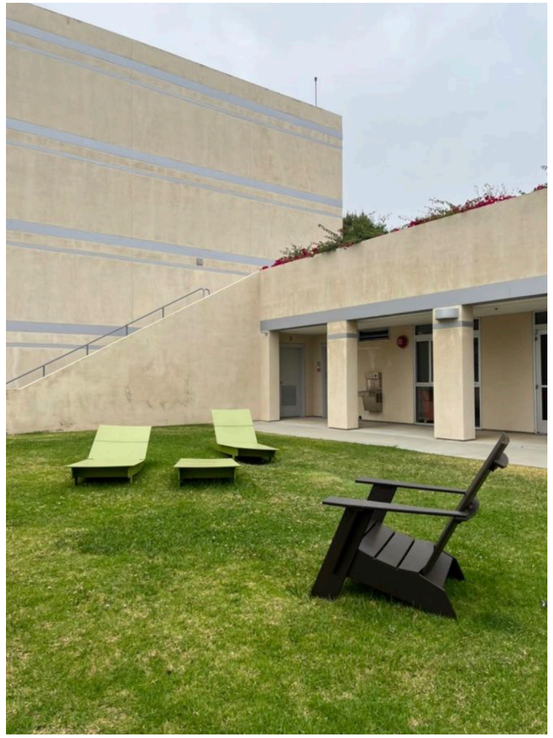
"I feel like it's closed to the public but when I did go there I felt kinda unsure about whether or not I could be there. 'Cause I think there were security on the sides, but I'm not sure. 'Cause there was no one there except one person sitting on the benches and it was super empty…I don't know if it was supposed to be closed and I was trespassing, but no one stopped me…Like there was ambiguity….So I don't know if this even counts as this is a public space."

"I've always seen the space but I've never really gone into it because I've never seen anyone use it and I was like "so if anyone's not using it I'm not allowed". But I've realized this third year I've seen people use the space and I was like "ohh I can actually use this space" so I just started using it because I like reading in the hammocks and I was like "it's a space provided for me I should use it" you know?"

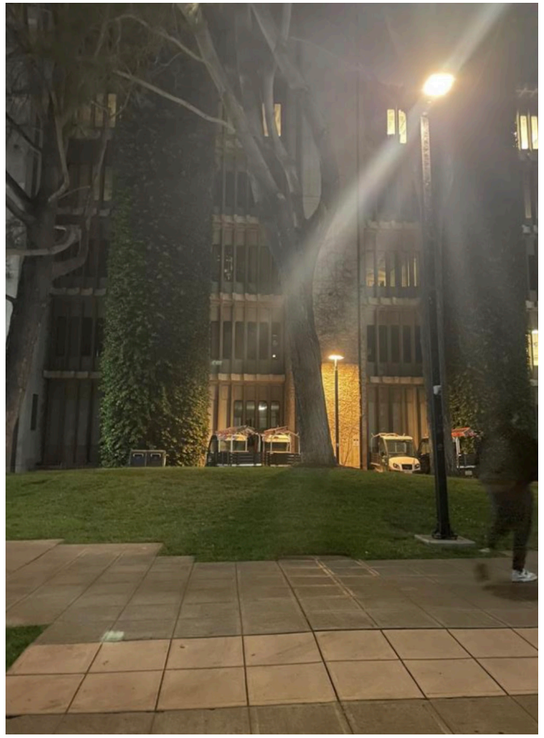
LACK OF CONSTRUCTED ELEMENTS

Lastly, some students noted that a lack of constructed elements prevented a space from reaching its full potential. Participants noted that although they liked these spaces, having additional constructed elements such as tables or other types of outdoor furniture would allow a space to become more multi-use and effectively serve more student needs.

Figure 12:
Students discuss the *lack of constructed elements* in spaces.



"It's just a few like random chairs scattered. But I think it shows the lawn could be so much more. Like I feel like if they put out more chairs and it wasn't just these random ones over here, and if they cultivated some sort of theme or vibe, it could be a really nice place just to hang out."



"I think that there could be tables or something because then I would actually want to spend time in the place because there's only benches and if I'm gonna do homework, I can't really do homework on just benches."

Discussion

This project utilized photovoice methodology to study student perceptions of public open space at UCSD. Specifically, it seeks to answer these two questions: (1) What roles do public spaces play for students and are these spaces considered third spaces? (2) What characteristics of public space attract students and promote place attachment?

Public open space at UCSD is diverse. The roles these spaces serve for students reflect this diversity, acting as places to destress and find peace, to places to travel through or spend time in. The diversity of positive and negative elements identified by students reveal contrasting preferences for spaces depending on the roles they play for students' lives. In smaller, quieter spaces such as the Old Student Center Hammocks, Muir Courtyard, or Center Hall Courtyard, students identified a feeling of enclosure as being conducive to their ability to relax and feel calm. On the other hand, the openness, central location, and popularity of Sungod Lawn seems to create an environment well-suited to spending time with friends. In contrast, a sense of privacy and limited use by others drew students into these quieter spaces. Moreover, places such as the Epstein Family Amphitheater were designed as event spaces, areas for students to gather in large numbers at planned times for active use, while walkways such as the one in Eleanor Roosevelt College are designed for more passive use, creating a pleasant environment for students passing through to get to their destinations.

A Different Type of Space

Most of the public open spaces selected by students do not seem to be third spaces. While students use these spaces to rest and recharge, many students have indicated that they use these spaces to rest and recharge alone, rather than going to socialize or do work. When students do socialize within these spaces, gatherings are often planned with individual groups of friends rather than interacting with strangers. These public open spaces on campus do not meet the criteria of third spaces established by Oldenburg (1989), who describes third spaces as places where unplanned, informal socialization occurs with strangers. Sungod Lawn, the most popular public open space identified in this project, lacks a crucial characteristic of a third space: informality. The social activities are planned and do not promote socialization with other members of the community.

Although many public open spaces in this project are not considered a third spaces, they still serve essential roles for students. These spaces reveal the need for a new category of space outside of the three types of spaces present in the traditional third place framework originally created by Oldenburg (1989). Spaces such as the Center Hall Courtyard and Old Student Center Hammocks almost exclusively encourages individual relaxation, an escape from the bustle of UCSD's campus. These spaces are highly valued for students, generating positive emotions and giving students places to relax. Instead of serving the role of a traditional third place, public open spaces at UCSD give students the opportunity to interact with and benefit from the mental health benefits of greenery and create an overall positive environment for students in college. Outdoor greenery distinguishes public open space from traditional third spaces which are typically, seen as indoor places such as coffee shops or bookstores. While these typical third places provide a comfortable place indoors to socialize with fellow community members, the draw of public open space is their quality of being outdoors with in an amongst greenery and perceived natural environments, which promote a feeling of quiet relaxation, shared alone or with friends, unique to these spaces.

Place Attachment and Public Open Space

The crucial role these spaces despite their lack of role as a third space is shown through the place attachment students feel towards public open space on campus. Students used words such as "favorite", "magical", "love", "community", and "ownership" to describe the places they selected in their responses. These words reveal deep and meaningful connections and bonds students have formed with certain spaces on campus. Especially students in upper class levels, certain spaces have been consistent parts of their lives since the beginning of their undergraduate education. These spaces play hyper-individualized roles for these individuals, creating positive memories and emotions permanently attached to the location. Many students describe going out of their way to visit these spaces, consistent with previous research finding the benefit place attachment has in encouraging people to go outdoors and use public places further and promote greater livability in urban environments (Moulay et al. 2018).

Place attachment is facilitated by consistent and meaningful use of a particular space by individuals. Therefore, factors that attract students to use public open spaces will likely contribute to the process of place attachment. Many of these factors were identified by students through their discussion of positive and negative elements within the spaces they selected, including positive emotions, natural elements, social elements, and logistical elements.

Busy and vibrant spaces with a great deal of human activity seems to attract more human activity. Many participants described enjoying "people watching" and other forms of usage occurring alongside their individual use of the space. Jane Jacobs, discussing urban parks writes, "The more successfully a city mingles everyday diversity of uses and users in its everyday streets, the more successfully, casually (and economically) its people thereby enliven and support well-located parks that can thus give back grace and delight to their neighborhoods instead of vacuity" (Jacobs 1961, 111). In other words, people attract people, spaces which are well-loved and well-used attract more users to the space. Popular spaces such as Sungod Lawn are centrally located, surrounded by a mixture of other uses such as classrooms, food vendors, and residential halls, which make it accessible for a wide variety of students to utilize the space and create activity. This activity in turn, seems to attract more activity, creating a positive cycle of usage of the space. On the other hand, spaces which are quieter seem to have more difficulty attracting new users. For example, the participant who selected Old Student Center Hammocks discussed feeling uncertain about entering the space because they had never seen anyone else use it.

Similarly, many students discussed the presence of a widely accepted name as being conducive to use by other students. Spaces such as the Old Student Center Hammocks, which lack an official or community recognized name make it difficult for students to share with their peers, perhaps contributing to its limited use by students. On the other hand, Sungod Lawn, an iconic space on campus enjoys exceptional recognition by students, who discuss the space as being widely recognized, even by people who are not fully familiar with the UCSD campus. Participants in interviews pointed out that simply having a name makes it easy for students to identify the space, situate themselves in the context of the rest of the campus, and use the space as a gathering place.

Greenery and Public Open Space

Greenery is by far one of the most important elements for public open space at UCSD. In this study, almost every participant identified greenery as a positive characteristic in the spaces they identified. Greenery is the second most mentioned positive element in this project, trailing only slightly to positive emotions. Even then, many of the positive emotions identified by students, such as the feeling of calm and relaxation, is tied to the effects of greenery on mental well-being. It is no surprise then that the only space identified multiple times by students is Sungod Lawn. This may be because of a variety of factors, including the positive elements identified by students, such as its accessible location and its size. However, this may also be explained by other, more personal reasons. Perhaps Sungod Lawn typifies the idea most students have of

public open space: a large, park-like, open area dominated by greenery, which creates a feeling of "being connected to nature". Students seem to have predetermined notions of open space and expect areas which are open and grassy serving as places to gather and play sports. Despite many outdoor spaces on campus being maintained, human-created spaces, students identified the "natural look" of the environment as a reason they liked a space. Sungod Lawn, the most popular space identified acts as a central park for students, a large, manicured space allowing students to easily access "nature".

The greenery elements of Sungod Lawn and other green spaces may attract students due to the mental health, well-being, and restorative associated with greenery in open spaces (Holt et al. 2019; Lau et al. 2014; Scholl and Gulwadi 2015). Grass seems to be particularly important to many students. Two participants who selected Sungod Lawn both submitted highly focused pictures of the Lawn's grass and discussed the crucial element of grass in this space. Grass seems to serve a dual purpose: (1) acting as a space for students to interact with greenery and (2) acting as seating and facilitating group socialization and individual relaxation. Grass and other types of greenery are essential parts of public open space, a core characteristic which allows these areas to be unique spaces of relaxation and calm.

Conclusion

This project begins to uncover the use of, and the personal meanings space has for college students at UCSD using photovoice methodology. Despite its very small sample size, the results of this project indicate that public open spaces at UCSD are diverse and serve a wide variety of roles for students. For UCSD, a rapidly urbanizing campus with a growing student population, public open space is increasingly important for students for its mental health and restorative benefits. Factors such as greenery and enclosure create a calm environment for students to escape from their busy day to day lives. These spaces are diverse in type and role, varying between students in their understanding and usage of the space. Although these spaces are not third spaces by the definition created by Oldenburg, they are still crucial to the campus landscape and represent a different type of space unique to outdoor, public open spaces. Due to the unique characteristics of this type of space, UCSD students exhibit place attachment with many of the spaces they highlighted, showing deep and positive bonds between individuals and diverse spaces on campus. Students who form attachment to these spaces and interact with the greenery within them benefit from the community building and well-being benefits of these spaces, making them important for the student experience. Public open spaces should not be evaluated by the number of students who use them, rather, they should be judged based on the meanings they have for students and the deeper connections they create between people and place. Smaller, quieter spaces with less users are equally as important to the campus landscape as larger and more popular spaces. Students perceive these spaces differently, using them for different purposes depending on their design, therefore, a wide variety of spaces should be included on campuses to fully meet the diverse needs of students.

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Appendix A. Interview Questions

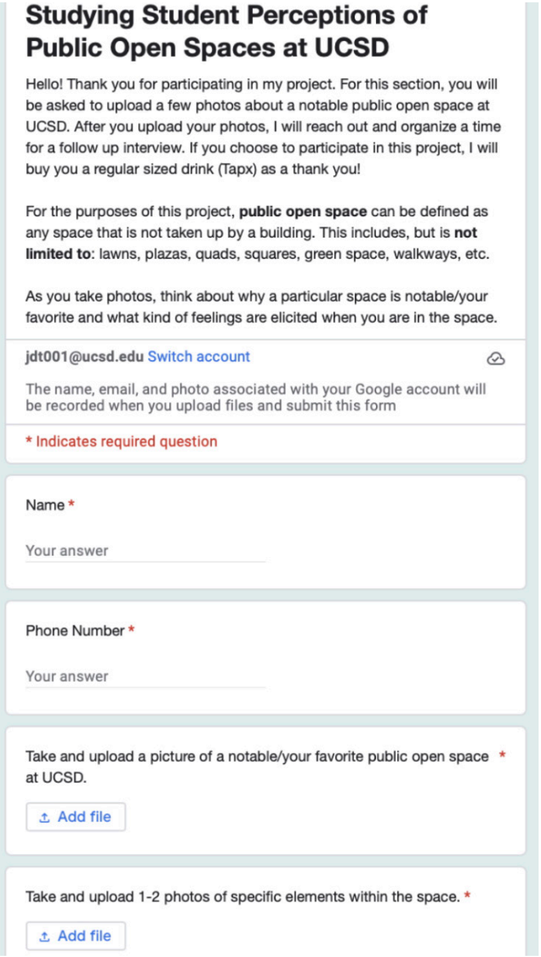
Statement of Informed Concent

You are participating in an individual research project through UCSD TRELS studying student perceptions of public open space on the UCSD campus. The data collected from you will be anonymous and none of the photos or responses in the interview will be attached to your name. The findings will be presented in an academic paper. This interview will be recorded for data analysis purposes but will not be shared to anyone, The recording will be on my personal device and will not be accessed by anyone except for me. After the end of Spring Quarter, the recordings will be deleted.

Interview Questions

1. Photo of the space
   a. Tell me about this photo. Why did you take it?
   b. How often do you visit this space?
   c. What brings you to this space?
   d. How do you feel when you are in this space?
   e. Do you have a notable memory of when you used this space?
2. 1-2 Photos of specific characteristics in the space
   a. Tell me about these photos. Why did you take them?
   b. How do you feel about these specific characteristics?
   c. What does this characteristic add or detract to/from this space?
   d. What role do these characteristics play in this space?
3. From your perspective, what would make this space better?
4. After this discussion, is there anything else you want to add about this space?

Appendix B. Photo Collection Form



Studying Student Perceptions of Public Open Spaces at UCSD

Hello! Thank you for participating in my project. For this section, you will be asked to upload a few photos about a notable public open space at UCSD. After you upload your photos, I will reach out and organize a time for a follow up interview. If you choose to participate in this project, I will buy you a regular sized drink (Tapx) as a thank you!

For the purposes of this project, **public open space** can be defined as any space that is not taken up by a building. This includes, but is **not limited to**: lawns, plazas, quads, squares, green space, walkways, etc.

As you take photos, think about why a particular space is notable/your favorite and what kind of feelings are elicited when you are in the space.

jdt001@ucsd.edu Switch account

The name, email, and photo associated with your Google account will be recorded when you upload files and submit this form

* Indicates required question

Name *

Your answer

Phone Number *

Your answer

Take and upload a picture of a notable/your favorite public open space * at UCSD.

Add file

Take and upload 1-2 photos of specific elements within the space. *

Add file

Jarvis Tran

Biography

I am a fourth year Urban Studies and Planning major with a minor in History. At UCSD, I am co-president of Urban Changemakers, a placemaking student org, focused on making spaces on campus more vibrant and inclusive. After college, I plan to work as an urban planner at the local municipal level before returning to school and pursuing a PhD in Urban Planning, doing research and teaching. My research interests include: public space, place attachment, third spaces, and how we influence the built environment and how the built environment influences us.

Acknowledgements

I am eternally grateful for Professor Amy Lerner who continues to be an invaluable source of support and mentorship. Thank you to everyone who participated in this project and taking the time to share their experiences with me. This project was supported by the Triton Research & Experiential Learning Scholars (TRELS) program.

ALUMNI
SPOTLIGHT

WRITTEN BY JOHNNY TRAN

Mohnish Alishala

Class of 2023 | B.S. Human Biology | Challenger Journal Volume 4 Author | High School Science Teacher
Future Medical Student

While earning his B.S. in Human Biology at UC San Diego, Mohnish Alishala found his interest in science communication, where he was able to combine his passions for the sciences and teaching. His experiences providing medical care to underserved populations with the International Health Collective, mentorship as a freelance Biology and Chemistry tutor and undergraduate instructional assistant, and exploration into the biological sciences as a Sanford Burnham Prebys lab intern have led him to be a high school science teacher and future medical student.

As an undergraduate student, Alishala found that he wanted to make an impact on the current healthcare landscape outside of the classroom and joined the International Health Collective. This organization is based at UC San Diego and aims to battle health disparities between the San Diego and Tijuana international border communities through a variety of community-building programs. As the Director of Community Health, Alishala became responsible for the coordination of health education workshops; in this role, he created educational workshops and resources on chronic conditions, such as diabetes and hypertension and helped patients in the area be more knowledgeable about their diagnosis, aiming to prevent other prevalent health conditions. Alishala's ability to make tangible health education impacts on this community piqued his interest in teaching, and reinforced his desire to pursue a career in medicine. He continues to be active in the organization today as President, where his main priority lies in optimizing the organization's administration so both volunteers and patients can have a smoother and more fulfilling experience.

Alishala was also involved in laboratory research while pursuing his B.S. with Professor Christopher Glass, which he was able to publish in Volume 4 of the Challenger Research Journal. His paper titled "Use of CRISPR/Cas9 Gene Editing Methods to Investigate the Mechanism of Trem2-Dependent Gene Expression in Macrophages" explored the types of immune responses associated with Alzheimer's disease, liver fibrosis, and metabolic syndrome. This background in traditional wet lab research not only provided a new way of exploring his Human Biology major, but also increased insight into the efforts being made in biology and biotechnology research.

When graduating from UC San Diego, Alishala knew he wanted to take a gap year before applying to medical school, but none of the traditional gap year options aligned with his previous experiences and interests in science communications. He thus decided to find a job that combined his passion in community outreach, natural sciences, and education, eventually becoming a high school science teacher. In this role, he educates students on freshman-level and Advanced Placement (AP) Biology and Chemistry. Although the working hours can be long and the grading can be tedious, he notes that teaching has been a fulfilling career, especially for his AP Biology students. The course material ranges from more detailed biological mechanisms to the social implications of biological findings; Alishala's wide variety of experiences serves as a strong foundation to fuel his students' curious minds. In turn, Alishala was able to build his science communication skills by breaking down large complex topics into smaller, more digestible content. He notes this skill will be extremely useful during his training as a medical student this fall and can translate to how he communicates treatment plans or diagnoses to patients.

For students looking for a path toward medical school, Alishala recommends that students not be so harsh on themselves and find experiences that speak to them personally. It is easy to compare GPAs, number of extracurriculars, or any other stats and have them serve as a benchmark value, but that is often not an indicator of a successful or fulfilled applicant. He believes that as long as students try their best, they should be proud of their achievements, no matter the outcome.

CHALLENGER

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