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Evaluating the Effectiveness of Peer Engagement and Knowledge (PEAK): A Community-Based Group Intervention for Youth in Hawaiʻi

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Evaluating the Effectiveness of Peer Engagement and Knowledge (PEAK):

A Community-Based Group Intervention for Youth in Hawaiʻi

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PsyD Program in Clinical Psychology

In Partial Fulfillment of the Requirements for the Degree

Doctor of Psychology

By

Jennifer T. T. Ho

December 2018

PsyD Program Signature Page

This dissertation, written under the direction of the candidate's dissertation committee and approved by members of the committee, has been presented to and accepted by the faculty of the PsyD Program in Clinical Psychology in partial fulfillment of the requirements for the degree of Doctor of Psychology. The content and research methodologies presented in this work represent the work of the candidate alone.

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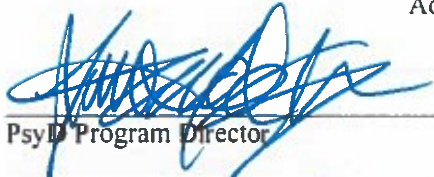
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Dedications and Acknowledgments

"Sometimes we have to leave home in order to find out what we left there,

and why it matters so much" – Shauna Niequist

Thank you to my *family, especially my parents,* for raising me with all of the opportunities that you did not have – including the opportunity to leave home and pursue my own dreams. Despite being thousands of miles away, you have managed to stay close, ensuring that I always remembered where I am from, where I want to go, and why I am here today. Thank you to my *dissertation chair* and *committee members* for guiding, challenging, and supporting me throughout this dissertation process and throughout my doctoral training as well. I am a different person from when I started, and I am so grateful to each of you, for all of the wisdom and kindness that you have shared with me along the way. Thank you to my dream team – *my trailblazing aunty, statistician, shinnyo family, and best friend* – for your understanding, patience, and belief in me. Thank you to *Family Programs Hawaiʻi* for the opportunity to work with you seven years ago. I am so grateful that our relationship has grown and evolved over the years. Thank you for collaborating with me on this project and for allowing me the privilege of sharing the important work that you do – on a daily basis – for our youth back home.

Thank you. Mahalo. Xie xie.

Abstract

This study is a program evaluation with a mixed methods design that evaluated the effectiveness of Peer Engagement and Knowledge (PEAK), a six-week community-based group intervention that incorporates mindfulness-based interventions (MBIs) to address multiple health behaviors for multiracial youth in Hilo, Hawaiʻi. A total of 51 youth, ages 12-23 years old, participated in this mixed-methods study that included pre-/posttest analyses of health risk factors such as substance use and depression and health promoting factors such as resilience, self-esteem, and mindfulness. Responses from two subsets of participants, who engaged in a focus group ($n = 11$) and composed gratitude letters ($n = 12$), were analyzed using a thematic analysis approach. At baseline, 41.17% of youth endorsed moderate or severe levels of depressive symptomatology, 29.41% endorsed using at least one substance within the past 30 days, 94.12% endorsed high levels of resilience, 31.37% endorsed high levels of self-esteem, and 7.84% endorsed high utilization of mindfulness skills. Following their completion of PEAK, youth demonstrated statistically significant improvements on their levels of depression, resilience, self-esteem, and mindfulness scores, but not on substance use behaviors. Overall, youth's health risk profiles improved such that the number of health risks decreased and the number of health promoting factors increased. Youth also found the MBIs to be acceptable and beneficial to their overall well-being, as it served as a positive coping strategy for stress and a mechanism to improve decision-making skills. PEAK demonstrates promise to be an effective community-based group intervention that enhances multiple health behaviors for multiracial youth in Hilo. Due to the small sample size, generalizability of results is limited. Limitations and implications for future research are also discussed.

  Keywords: multiple risk behavior change, health risk factors, health promoting factors, substance use, depression, resilience, self-esteem, mindfulness, youth, adolescents, Hawaii

Evaluating the Effectiveness of Peer Engagement and Knowledge (PEAK): A Community-

Based Group Intervention for Youth in Hawaiʻi

Adolescence is a critical developmental period characteristic of physical, neurological,

social, and emotional changes that often includes added exposure to multiple health risks

(Erikson, 1950; World Health Organization [WHO], 2018). According to the WHO (2018), the

main health risks affecting adolescents worldwide include substance use, untreated mental health

issues, interpersonal violence, road traffic injuries, sexually transmitted infections, teenage

pregnancy, malnutrition, obesity, and infectious diseases. In Hawaiʻi, the primary health risks

affecting adolescents include unintentional injuries and violence, substance use, early sexual

encounters, malnutrition, asthma, lack of engagement in routine/preventative medical visits, and

limited mentoring relationships (Hawaiʻi Youth Risk Behavior Survey [HYRBS], 2016).

Whereas some adolescents may experience a single risk factor, the research on multiple risk

behaviors posits that majority of individuals experience co-occurring risks, often due to multi-

system influences that promote the development of unhealthy behaviors within the context of

one another (Babowitch & Antshel, 2016; Hale & Viner, 2016; Prochaska, Prochaska, &

Prochaska, 2014; Prochaska, Spring, & Nigg, 2008). As such, there has been an increase in the

number of studies examining the efficacy, effectiveness, and efficiency of targeting multiple risk

behaviors within the same intervention (Arbour-Nicitopoulos, Faulkner, & Irving, 2012; Chen,

Thompson, & Morrison-Beedy, 2010; Kippling, Campbell, MacArthur, Gunnell, & Hickman,

2012; Guilamo-Ramos, Litardo, & Jaccard, 2005; Hale, Fitzgerald-Yau, & Viner, 2014; Hale &

Viner, 2016; Prochaska et al., 2014; Prochaska et al., 2008; Ritchwood et al., 2015).

Growing research on mindfulness-based interventions (MBIs) have demonstrated that

mindfulness practice has the potential to address multiple psychological, physiological, and

behavioral ailments with adolescents (Burke, 2010; Kallapiran, Koo, Kirubakaran, & Hancocet, 2015; Perry-Parrish, Copeland-Linder, Webb, & Sibinga, 2016; Tan & Martin, 2015; Zack, Saekow, Kelly, & Radke, 2014). The development of maladaptive coping strategies and negative affective experiences that stem from learned responses to chronic, contextual stress, may also be disrupted with the use of MBIs (Perry-Parish et al., 2016). Recent research has also examined the feasibility and effectiveness of adapting MBIs for use with adolescents in vulnerable populations and has found MBIs to be feasible, accepted by youth, and correlated with positive mental health outcomes (Biegel, Brown, Shapiro, & Schubert, 2009; Jee et al., 2014; Himelstein, Saul, & Garcia-Romeu, 2015; Le & Proulx, 2015; Tan & Martin, 2015). Since engaging in mindfulness practice has the potential to affect cognitive and emotional processes such as nonjudgmental acceptance, metacognitive awareness, and self-regulation, incorporating MBIs into programs that target multiple health behaviors in adolescents may reduce engagement in risk behaviors and subsequent adverse outcomes (Biegel et al., 2009; Himelstein et al., 2015).

Despite research that suggests the potential benefits of teaching MBIs as a method to reduce engagement in risk behaviors and improve psychological well-being, few studies have examined the effectiveness of incorporating MBIs into prevention and early-intervention programs targeting multiple risk behaviors with adolescents. Furthermore, to this author's knowledge, there is only one study to date that has examined MBIs to treat multiple risk behaviors among Native Hawaiian and Other Pacific Islander adolescents (Collier et al., 2018), two studies among Asian American youth (Fang, Schinke, & Cole, 2010; Taylor, Graham, Cumsille, & Hansen, 2000), and no studies that have examined the use of MBIs to improve multiple risk behaviors among both populations (Hale, Fitzgerald-Yau, & Viner, 2014). This study is a program evaluation with a mixed methods design, that evaluated the effectiveness of

Peer Engagement and Knowledge (PEAK), a six-week community-based group intervention that incorporates MBIs to address multiple risk behaviors for multiracial youth in Hilo, Hawaiʻi. Changes in health risk factors such as substance use and depressive symptomatology and health promoting factors such as self-esteem, resilience, and mindfulness were assessed.

Literature Review

Historical and Cultural Context of Hawaiʻi

The Hawaiian Island archipelago is comprised of 137 islands, atolls, islets, and seamounts that extend 1,500 miles northwest in the northern Pacific Ocean (State of Hawaiʻi Department of Business, Economic Development & Tourism, 2017; U.S. Census Bureau, 2010). The State of Hawaiʻi is comprised of eight major islands – Niʻihau, Kauaʻi, Oʻahu, Maui, Molokaʻi, Lanaʻi, Kohoʻolawe, and Hawaiʻi Island – and is the most isolated population center on Earth, as it is 2,390 miles from California, 3,850 miles from Japan, and 4,900 miles from China (U.S. Census Bureau, 2010). Native Hawaiians are defined as "any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaiʻi" (McCubbin & Marsella, 2009; Statehood Admissions Act of Hawaiʻi, 1959). Native Hawaiians (43%) comprise the largest ethnic group within "Pacific Islanders;" however, there are over 50 ethnicities within this population which includes Samoan, Guamanian or Chamorro, Tongan, Fijian, Marshallese, and other Micronesian (Braun, Kim, Kaʼopua, Mokuau, & Brown, 2014). The historical and cultural context of Hawaiʻi is complex and can be understood in two segments: (a) pre-colonization which refers to the period prior to Western contact in 1778 and (b) post-colonization which refers to 1778 onward.

Pre-colonization. The first Native Hawaiians arrived between 200 to 600 A.D. from the Marquesas, Tahiti, and Society Islands on double-hulled canoes. Following their arrival, a period

of migration between Polynesia and the Hawaiian Islands ensued until 1400. Separate kingdoms and societies were established on each of the major islands and population estimates ranged from 400,000 to 875,000 (Stannard, 1989). Indigenous and Native Hawaiian cultural practices were well established, with two of the most fundamental systems including the *'ohana* (family) and the *'aina* (land). Native Hawaiian communities were healthy, thriving, self-sustaining, and living with a sense of *lokahi* (harmony with the mind, body, spirit, and land; Braun et al., 2014; McCubbin & Marsella, 2009).

  Post-colonization. In 1778, Captain James Cook and his company arrived from Europe and renamed the islands the "Sandwich Islands." Following his arrival, approximately 90% of the Native Hawaiian population died from infectious diseases. American missionaries, whaling ships, and European/American business men continued to arrive and take ownership of land, politics, and the economy. In 1850, laborers from China, Japan, Portugal, Puerto Rico, and the Philippines were brought to work in the growing sugar cane and pineapple industries. Throughout this time, the Native Hawaiian monarchy upheld its power and continued to establish Hawai'i with its own government, constitution, international policies, and treaties. In 1893, the U.S. Navy and a group of American businessmen independently invaded the sovereign Hawaiian nation and forcefully overthrew Queen Lili'uokalani and thus the last of the Hawaiian monarchy. The U.S. annexed the Kingdom of Hawai'i in 1898 without a single Native Hawaiian vote. Hawai'i was later established as a territory in 1900, endured the Pearl Harbor bombings in 1941 during World War II, and became the 50th state in 1959 (McCubbin & Marsella, 2009; Statehood Admissions Act of Hawai'i, 1959).

  Up until the year 2000, Native Hawaiians and Other Pacific Islanders were classified as Asian American/Pacific Islanders on the U.S. Census, despite their indigenous heritage (U.S.

Census, 2000). The 2000 Census was the first census that separated Native Hawaiians and Other

Pacific Islanders as their own racial class which provided the opportunity for more accurate

reporting of various population characteristics (Braun et al., 2014; McCubbin & Marsella, 2009;

Pokhrel & Herzog, 2014; U.S. Census, 2000). Advocates for and researchers of Native Hawaiian

and Other Pacific Islander health call for the disaggregation of these racial groups, due to their

distinct health needs (Braun et al., 2014; McCubbin & Marsella, 2009; Pokhrel & Herzog, 2014).

    In 2010, Hawaiʻi's population was 1.3 million, with close to one-million residents

residing on the island of Oʻahu and 185,079 residing on the island of Hawaiʻi (also known as the

"Big Island"; U.S. Census, 2010). Statewide, Hawaiʻi residents identified as 38.6% Asian, 24.7%

White, 23.6% bi/multiracial, 10.0% Native Hawaiian/Other Pacific Islander, 8.9% Latinx, 1.6%

Black/African American, and .3% American Indian and Alaska Native (U.S. Census, 2010).

Hilo, a region that comprises the eastern half of the Big Island and serves as the setting of the

PEAK intervention in this study, is comprised of residents that identified as 34.3% Asian, 32.5%

bi/multiracial, 17.6% White, 14.2% Native Hawaiian/Other Pacific Islander, 10.4% Latinx, .5%

Black/African American, and .3% American Indian and Alaska Native. Corresponding data from

Epic ʻOhana (2015) indicated that youth under 18 on the Big Island identified as 50.8%

bi/multiracial, 16.1% White, 15.6% Native Hawaiian/Other Pacific Islander, 12.6% Asian, 4.0%

some other race, .5% Black, and .4% American Indian and Alaska Native.

Health in Hawaiʻi

    Compared to other ethnic groups in the state, Native Hawaiians and Other Pacific

Islanders have the shortest life expectancy along with higher rates of cancer, diabetes, lifetime

trauma exposure, depression, and substance use, further emphasizing the intergenerational

impact of colonization, historical trauma, discrimination, and loss of traditional cultural values

and practices on current health and well-being (Braun et al., 2014; Pokhrel & Herzog, 2014). Other systemic contributors to poorer health include poverty and limited access to medical services. On the island of Hawaiʻi, 25.6% of children under the age of 18 lived below the poverty line and the entire island is federally designated as a medically underserved population (Epic ʻOhana, 2015; Health Resources & Services Administration, 2018). To combat the shortage of providers and access to healthcare services, community health centers, schools, organizations, and agencies have positioned themselves to collaborate with one another to improve the health of the community (Epic ʻOhana, 2015).

        Substance use. Although evidence suggests that youth in Hawaiʻi display similar substance use profiles when compared to national averages (Substance Abuse and Mental Health Services Administration [SAMHSA], 2017), youth in Hawaiʻi are impacted by multi-system influences that are culturally nuanced and embedded in the historical and political context of this community (McCubbin & Marsella, 2009). Nationally, 5.7% of youth endorsed tobacco use, 9.4% endorsed alcohol use, 12.3% endorsed marijuana use, and 2.7% endorsed illicit drug use (not including marijuana). In comparison, 4.0% of youth in Hawaiʻi endorsed tobacco use, 9.1% endorsed alcohol use, 13.4% endorsed marijuana use, and 3.1% endorsed illicit drug use (not including marijuana). According to the 2016 Hawaiʻi State and Counties High School Youth Risk Behavior Survey (HYRBS), youth living on the island of Hawaiʻi reported the highest prevalence of all substance use behaviors (with the exception of electronic vapor products which was second highest), when compared to all other counties statewide. This includes behaviors such as past, current, and early initiation of cigarette smoking; past, current, and early initiation of alcohol use; as well past, current, and early initiation of marijuana use. Youth on the island of Hawaiʻi endorsed the highest rates of using alcohol or drugs as a coping strategy (24%), using

alcohol or drugs when alone (21.9%), getting into trouble while under the influence (15.9%),

experiencing memory loss while under the influence (19/8%), and having attended school under

the influence (18.8%; Saka et al., 2016).

Another study examining substance use behaviors among prominent ethnic groups in

Hawaiʻi ($N = 196$) found that Native Hawaiian and White high school students drank

approximately twice as much as their Filipino and Japanese peers. Native Hawaiian youth were

also found to have the highest rates of ever having tried alcohol (82%), when compared to White

(57.5%) and Japanese (44.9%) students (Nishimura, Hishinuma, & Goebert, 2013). In a study

examining tobacco use among a multiethnic sample of public middle school students in Hawaiʻi

($N = 3,438$), smoking prevalence was highest among Native Hawaiian/Pacific Islander, White,

and Filipino students and lowest among Japanese and Chinese students (Glanz, Maskarinec, &

Carlin, 2005). In accordance with national increases in the use of electronic vapor products (e.g.,

e-cigarettes), Hawaiʻi youth surveyed in a statewide study ($N = 1,941$) also demonstrated

elevated rates of e-cigarette use with 17% of tobacco users endorsing the use of e-cigarettes only

and 12% endorsing dual use of e-cigarettes and cigarettes. E-cigarette only and dual users were

categorized at intermediate risk levels (i.e., endorsed moderate risk and protective factors) and

perceived e-cigarettes to be healthier options than traditional cigarettes (Wills et al., 2015).

Depression. Nationally, 12.6% of youth endorsed experiencing at least one major

depressive episode in the past year and 3.9% endorsed suicidal thoughts (SAMHSA, 2017;

SAMHSA, 2015). In Hawaiʻi, this statistic was 11.0% and 4.1%, respectively (SAMHSA, 2017;

SAMHSA, 2015). Within the state, youth on the island of Hawaiʻi, endorsed the highest

prevalence of depressive symptomatology such as feeling sad or hopeless (32%), engaging in

self-injurious behaviors such as cutting or burning themselves (25.5%), and attempting suicide

(14.6%; Saka et al., 2016). A secondary data analysis on Youth Risk Behavior Surveys from 1999-2009, focused on depression and suicidality among Asian, Pacific Islander, and multiracial high school students, and found that Pacific Islanders were more likely than Asians to report depressive symptoms and suicidal ideation (Wong, Sugimoto-Matsuda, Chang, & Hishinuma, 2012). Of all ethnic groups sampled in this study, Pacific Islander adolescents demonstrated the highest risk for suicide in the U.S., with prevalence of suicide attempts more than double the national average (7.8% and 2.3% respectively). Furthermore, nearly 1 in 15 (6.5%) of these attempts required medical attention (Wong et al., 2012).

Health Promoting Factors

Since the 1970s, there was a resurgence of Native Hawaiian culture, which called for a return to traditional cultural practices and values. This period, termed the "Hawaiian Renaissance," resulted in individuals reclaiming their Native Hawaiian identities and finding strength within the community (Hishinuma et al., 2009; McCubbin & Marsella, 2009). Resilience and self-esteem are two developmental assets that promote well-being in youth and serve as a way to foster effective action on health inequities (Brooks, Magnusson, Spencer, & Morgan, 2012).

Resilience. Much of the current research on resilience is based on Western perspectives that focus on strengthening individual characteristics to overcome adversity and achieve positive outcomes (Zolkoski & Bullock, 2012). Critics of Western resilience research have argued that resilience has been inaccurately conceptualized as an individual and one-dimensional construct and should instead be viewed as multidimensional, contextual, and inclusive of environmental, socio-ecological, and cultural factors (Cameron, Ungar, & Liebenberg, 2007; Johnson & Beamer, 2013; Ungar, 2013b). Cameron and colleagues (2007) offer a more culturally inclusive

definition that describes resilience as "a process of adaptation to adversity that is scaffolded by environmental, cultural, psychologic, and physiologic processes" (p. 285). In this interpretation, resilience considers both the individual's capacity as well as the condition of their family, community, and context to provide support in culturally appropriate and meaningful ways (Ungar, 2008).

In Asian American and multiracial youth populations, positive ethnic identity formation and family cohesion have been found to be critical in reducing problematic risk factors (e.g., suicide ideation) and enhancing resilience (Wong et al., 2012). Within Native Hawaiian communities, Austin (2004) found that ethnic pride was the most important protective factor in buffering against the experience or perpetration of violence and could serve as a way to encourage cultural resilience within this population. Johnson and Beamer (2013) also discussed the prominent role of storytelling in Native Hawaiian culture and how it serves as a way to transmit messages that perpetuate cultural values of strength in the face of adversity, persistence within the context of the group *('ohana)*, and the spirit of *aloha*.

Self-esteem. Similar to resilience, self-esteem is often conceptualized as an individualistic construct of self-worth or sense of value, which is informed by one's attitudes towards one's self (Blascovich & Tomaka, 1991; Rosenberg, 1965). It is often conceptualized as the evaluative component of one's self-concept and encompasses cognitive, emotional, and motivational mechanisms (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). Deficits in self-esteem have shown to yield negative health outcomes – especially for youth from vulnerable backgrounds – including depression, substance use, anxiety, aggression, and poor cultural socialization and ethnic identity development (Ames, Rawana, Gentile, & Morgan, 2015; Gartner, Kiang, & Supple, 2014; Guo et al., 2015; Miyamoto et al., 2001; Oshri et al., 2016;

Otsuki, 2003; Withy, Lee, & Renger, 2007). In contrast, the term collective self-esteem refers to individuals' appraisals of the solidarity of the group to which they belong, with a focus on collective worth, respect, and wellness (Luhtanen & Crocker, 1992; Yamaguchi, Akutsu, Oshio, & Kim, 2017). Fostering collective self-esteem may help to improve rapport with one another since the goal of the interaction would be to integrate into the community and share more concern for the group's, rather than the individual's, well-being (Yamaguchi et al., 2017).

Xu, Farver, and Pauker (2015) found that with regard to racial/ethnic differences, levels of self-esteem varied based on the geographical location, local populations, and impact of ethnic identity on self-identity. For example, Asian American adolescents who resided in the continental United States, where they hold a numeric minority, endorsed the lowest rates of self-esteem when compared to their White, Black, and Latinx counterparts (Bachman et al., 2011). In Hawai'i, however, Asian Americans hold the numeric majority (38%) and therefore endorse higher levels of self-esteem, that are not solely derived from their ethnic identity (Xu et al., 2015). In addition, self-esteem studies conducted with multi-ethnic samples (e.g., White, Filipino, Latinx, Japanese, Korean, Samoan, Native Hawaiian, and multiracial) of high school students in Hawai'i further emphasized that discrepancies on self-esteem were based on variables such as gender, self-reported grades, socioeconomic status, and family cohesion (with male gender and higher levels of the respective characteristics corresponding to increased self-esteem), and not based on ethnicity (Miyamoto et al., 2000; Miyamoto et al., 2001).

Additional studies that examined the effects of self-esteem within Asian American and/or Native Hawaiian and Other Pacific Islander adolescent populations were limited in number. However, a few studies have discussed the positive impact that growing up in Hawai'i has for Asian American and Native Hawaiian and Other Pacific Islander youth in regards to self-esteem

(Omizo, Kim, & Abel, 2008; Xu et al., 2015). Youth from these backgrounds hold the numeric majority in the state and thereby benefit from an environment in which Asian and Hawaiian cultural norms are valued, accepted, and proliferated. These cultural and contextual nuances enhance youth's self-esteem and self-efficacy, such that youth feel more confident about their abilities to pursue and attain goals, which may differ from Asian American and Native Hawaiian/Pacific Islander populations on the mainland (Omizo et al., 2008).

Health Behavior Theories

Health behavior theories attempt to describe why individuals engage in specific health behaviors and how individuals can engage in processes that change their risk behaviors to be safer and healthier (Noar, Chabbot, & Zimmerman, 2008). *Bioecological models* and *self-regulation theories* provide a comprehensive Western approach to understanding the interactions between context and individual, while also enhancing an individual's capacity to engage in self-regulatory practices that will improve the likelihood of engaging in positive health behaviors across settings. It is also important to incorporate Native Hawaiian conceptualizations of health, such as *lokahi,* to understand and effectively change health behaviors.

Bioecological model. Bronfenbrenner's theory of socio-ecological human development has undergone three phases of evolution (Rosa & Tudge, 2013). Phase 1 (1973-1979) included the ecological theory which emphasized contextual influences (e.g., microsystem, mesosystem, exosystem, and macrosystem; Bronfenbrenner, 1979). Phase 2 (1980-1993) included an added emphasis on the role of the individual and developmental processes within the context of time (chronosystem; Bronfenbrenner, 1993). Phase 3 (1993-2006), the *bioecological model*, is considered to be Bronfenbrenner's most advanced research design as it builds on his previous models to include the *Process-Person-Context-Time (PPCT) model* (see Figure 1 for more

details). The PPCT focuses on proximal *processes* which refers to the evolving, reciprocal, and dynamic relationships among and between the person, environment, and other people in that environment (Bronfenbrenner, 1999). The most influential *person* characteristic is considered to be that of force, which can be generative (e.g., curiosity, delayed gratification) or disruptive (e.g., impulsiveness, inability to delay gratification). The *context* characteristic includes the previously described four contexts (e.g., microsystem, mesosystem, exosystem, and macrosystem; see Figure 2). Lastly, the concept of *time* was expanded to be more inclusive of individual and group changes over the life course, intergenerationally, and through historical time of the past and future (Bronfenbrenner & Morris, 2006). Based on the *PPCT* model, effective interventions should focus on how to influence the proximal processes that occur intra- and interpersonally between the person and their various contexts. Additionally, it is important to examine the interactions and risk factors within the broader social context. Bioecological models consider the multiple internal and external factors that influence behavior at the biological, individual, interpersonal, community, environmental, policy, and global levels (Bronfenbrenner, 1993; Fitzgibbon, Kong, & Tussing-Humphreys, 2014; Rosa & Tudge, 2013).

       Self-regulation theory. *Self-regulation theory* is another example of a health behavior change theory that focuses on enhancing the dynamic processes involved in effectively setting, pursuing, and revising health behavior goals. The objective is to be able to effectively manage unexpected cognitive, emotional, and behavioral responses that arise in the face of stressful or unfamiliar settings, so that one is able to hold steadfast to their goals. As feedback systems, individuals are constantly developing a greater awareness of their relationships to the environment and building the capacity to regularly engage in effective coping strategies and problem-solving skills (Clark & Janevic, 2014; de Ridder & de Wit, 2006).

Lokahi. The Native Hawaiian conceptualization of health and well-being stems from the worldview that the self is grounded in social relationships and is inextricably tied to society and nature (Handy & Pukui, 1972; McCubbin & Marsella, 2009). When balance is achieved and maintained through these mutually supportive relationships, *lokahi* (a sense of harmony among mind, body, spirit, and land) is also achieved. From a Native Hawaiian perspective, *lokahi* is critical to promoting mental health and is embedded in the family, land, and spiritual world. It is believed that when these relationships are out of balance, maladaptive behaviors and psychopathology emerge and persist (Judd, 1998; Marsella, Oliveira, Plummer, & Crabbe 1995).

Figure 2 depicts the traditional Native Hawaiian conceptualization of the psyche (adapted from McCubbin & Marsella, 2009) and situates the person within a series of interconnected elements and interactive forces (*mana* and *lokahi*) that includes the person, ʻ*ohana* (family), *makani ʻaina wai* (nature), and ʻ*akua* and ʻ*aumakua* (gods and spirits). *Mana* can be defined as the life energy present in all things worldly and spiritually. It has the power to calm, energize, heal, and relax, and is also the force that connects person, family, land, and the spiritual world to one another (Oneha, 2001; McCubbin & Marsella, 2009). All of these beliefs and relationships are passed down intergenerationally and perpetuated within the ʻ*ohana*-system. Similar to other collectivistic cultures, ʻ*ohana,* is not limited to the immediate or even extended family. It is also inclusive of gods, family guardian spirits/gods, and *hanai* family members (e.g., community elders, offspring of other families who are incorporated into and cared for by other families). To promote health and well-being within this model, interventions should foster prosocial behaviors and engagement in culturally sensitive healing practices that restore interpersonal and psychological harmony (McCubbin & Marsella, 2009). Thus, examining Western health behavior models (e.g., *bioecological models* and *self-regulation theories)* within the context of

traditional Native Hawaiian conceptualizations of health is integral to understanding how health behaviors manifest and change within the multicultural environment of Hawaiʻi.

Multiple Risk Behavior Change (MRBC) Research

MRBC interventions are part of a small but growing field of research that aims to treat two or more risk behaviors simultaneously or sequentially within a limited time period (Arbour-Nicitopoulos et al., 2012; Chen et al., 2010; Prochaska et al., 2014; Prochaska, 2008; Prochaska et al., 2008). Risk behaviors include actions that individuals engage in to impact health and are inclusive of both risk factors that lead to negative outcomes (e.g., alcohol, tobacco, other drug use, suicidality, unsafe sex practices) and protective factors that promote positive outcomes (e.g., increased screening for mental/physical health concerns, physical activity; Prochaska et al., 2014; Prochaska et al., 2008). Coaction, which refers to the increased likelihood that effective action on one behavior (e.g., smoking cessation) will lead to effective action on another behavior (e.g., diet), is central to the mechanism of MRBCs (Prochaska et al., 2014).

Much of the early research on MRBC interventions was developed to maximize the number of positive outcomes that could be achieved during primary care visits, and as such, did not integrate the impact of mental health on behavior change (Prochaska et al., 2014). Brooks, Harris, Thrall, and Woods (2002) examined the impact of depression on risk behaviors within a sample of high school students ($N = 2,224$) and found that feelings of depression and stress were elevated in females and associated with increasing age, physical fights, tobacco use, unhealthy diet, and lack of birth control use. Similarly, in another study, Arbour-Nicitopoulos and colleagues (2012) found that more than one-third of their sample ($N = 2,935$ high school students) experienced psychological distress, which was significantly associated with being female, tobacco use, sedentary activity, more screen-time, and poorer diet. As a result, there is a

need to better understand the co-occurring influence of depression/psychological distress on

modifiable health risk behaviors, especially with adolescents (Arbour-Nicitopoulos et al. 2012;

Brooks et al., 2002; Curtis, Waters, & Brindis, 2011).

In addition, Prochaska and colleagues (2014) – leaders in the field of primary care

MRBCs – highlight the need for subsequent research to integrate efforts to alter multiple risk

behaviors and implement interventions that teach behavioral modification strategies that can be

generalized to multiple settings and behavioral health goals. They emphasize the need to expand

beyond the exam room and into the schools, worksites, and other community centers to reach

those who do not have access to primary care services. In accordance with this goal, Prochaska

and colleagues (2014) note the methodological issues with multi-behavioral interventions which

include a need for a better understanding of how to best analyze change amongst multiple

variables and balancing the need for rigorous psychometrics with simple and efficient assessment

tools. With regards to adolescents, there is also a need to develop intervention programs that

target both risk and protective factors, are theory driven, culturally sensitive, accessible, and

specific to the needs of the population (Lippke, Nigg, & Maddock, 2012; Noar et al., 2008;

WHO, 2014).

MRBC interventions in Hawai'i. Despite the dearth in literature, several studies have

focused on highlighting and evaluating programs that targeted multiple risk behaviors of children

and youth in Hawai'i (Beets et al., 2009; Hishinuma et al., 2009; Manaseri, Uehara, & Roberts,

2013). Beets and colleagues (2009) examined the five-year longitudinal effects of a prevention

program targeting substance use, violent behaviors, and early sexual activity among 1,714 fifth

graders across three Hawaiian Islands (Oʻahu, Molokaʻi, and Maui). The *Positive Action*

Program spanned 35-weeks, consisted of 140 lessons (15-20 minutes each), and was integrated

into designated school curriculums, with the aim to improve academics, student behaviors, and character development. Lessons were based on the theory of self-concept and theory of triadic influence and separated into modules that covered self-concept, positive mind and body actions (e.g., nutrition, physical activity, motivation, decision-making), socio-emotional skills for self-regulation, interpersonal relationships (e.g., empathy, respect, honesty with self and others), and self-improvement (e.g., goal-setting, persistence, courage to try new things). Self-reported substance use and violent behaviors were corroborated by teacher reports. Results demonstrated that youth who received the *Positive Action Program,* were less likely to engage in all three health risk behaviors, and long-term participation of three-years, led to significantly lowered rates of all health risk behaviors.

Hishinuma and colleagues (2009) evaluated *Hui Malama O Ke Kai (HMK),* an after-school prevention program for fifth and six graders ($N = 110$), that incorporated Native Hawaiian cultural values of *aloha* (love), *malama* (to care for), *'ohana* (family), *kuleana* (responsibility), and *mahalo* (gratitude, respect). The aim of *HMK* was to reduce multiple risk factors (e.g., anti-substance use, anti-violence) and improve multiple protective factors (e.g., self-esteem, academic success, healthy lifestyle, family cohesion, community pride, leadership, and Native Hawaiian values). Interventions included tutoring, cultural activities, ocean and other outdoor recreation, family-based activities, and health education. Pre- and posttest analyses revealed significant increases in knowledge and practice of Native Hawaiian cultural values and improvements in self-esteem, antidrug use, healthy lifestyles, and family cohesion.

Manaseri and colleagues (2013) described the development and pilot evaluation of *Making Pono Choices*, a culturally responsive and evidence-based sexual health curriculum, that reduced risky sexual behaviors (e.g., teen pregnancies; STI transmission) among middle school

students statewide. The development of the program started with a comprehensive needs assessment, partnership with local agencies who were experts on this topic, and based on social learning theory, self-regulation theory, and the developmental assets model. *Making Pono Choices* incorporated one Native Hawaiian cultural value into each of its 10 modules. For example, modules two through five included: being *pono* (the righteous result of actions will bring harmony within oneself, peers, family, and community); *mohala* (process of maturing physically, emotionally, and socially); *nohona* (relating and communicating with others); and *aloha* ("being in the presence of the breath of life and having the utmost mutual respect with one another," p. 2335). A total of three subsequent pilot tests, each of which built on feedback from the previous test, were administered and evaluated. Results of the pre- and posttest analyses were not presented in this study, as the authors planned to present the results in a follow-up study, which has yet to be published.

MBIs: A mechanism for behavior change

Mindfulness is often defined as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally (Kabat-Zinn, 1994, p. 4). In addition, Shapiro and colleagues (2006) proposed that the practice of mindfulness is composed of the simultaneous activation of three elements: attitude, attention, and intention. By engaging in these processes, individuals are able to develop a detached, non-judgmental, and objective perspective on their experience, which allows them to clearly observe, recognize, disengage, and reflectively respond to habitual patterns or thoughts. The use of MBIs to treat mental health conditions and improve well-being in adults has been well documented in a recent meta-analysis (Khoury et al., 2013) that included 209 empirical studies with moderate effect sizes. MBIs typically adhere to proponents of mindfulness-based stress reduction (MBSR), mindfulness-based cognitive therapy

(MBCT), acceptance and commitment therapy (ACT), or dialectic behavior therapy (DBT; Burke, 2010). Each method utilizes slightly different techniques to promote psychological well-being (MBSR), prevent depression relapse (MBCT), increase psychological flexibility (ACT), and enhance distress tolerance, emotion regulation, and behavioral self-control (DBT; Zack et al., 2014).

MBIs are theorized to aid in the improvement of underlying processes associated with maladaptive coping strategies and negative affective experiences that are learned as a result of chronic stress present in youth's familial, social, medical, and community settings (Perry-Parrish et al., 2016). In the past decade, there has been a significant increase in the number of studies examining the mechanism of MBIs along with the feasibility, efficacy, and effectiveness of adapting MBIs for children and youth (Burke, 2010; Kallapiran et al., 2015; Perry-Parrish et al., 2016; Zack et al., 2014). By disrupting processes associated with coping (e.g., rumination, maladaptive coping, adaptive coping), cognitive functioning (e.g., impulse control, attention, cognitive flexibility), and psychological functioning (e.g., decreased anxiety, anger reactivity, difficulties with emotions, and increased self-awareness), MBIs can significantly alter the ways in which youth respond to distressing and adverse experiences (Perry-Parish et al., 2016).

These skills may serve as a protective factor for youth from vulnerable and at-risk populations who experience a disproportionate amount of adversity in their daily lives (Perry-Parish et al., 2016; Rawlett & Scrandis, 2016). Recent research has found MBIs to be feasible, accepted by youth, and yielding of positive mental health outcomes in clinical (Biegel et al., 2009; Jee et al., 2014; Himelstein et al., 2015; Le & Proulx, 2015; Tan & Martin, 2015) and non-clinical populations (Tan & Martin, 2016). Therefore, MBIs for youth are part of a small, but

growing literature that highlights the benefits of incorporating mindfulness strategies as either

primary or adjunct therapies for adolescent populations (Burke, 2010; Kallapiran et al., 2015).

MBIs in Hawai'i. Despite the growth in MBIs for youth, a limited number of studies

have investigated the use of MBIs within youth in Hawai'i. To this author's knowledge, there is

only one study that focused primarily on youth in Hawai'i (Le & Proulx, 2015). The work by Le

and Proulx (2015) focused on utilizing a culturally adapted mindfulness practice (e.g., see

mindfulness and the *aloha* response in Le & Shim, 2014) as the primary intervention to address

stress, self-regulation, and impulsivity in a group of incarcerated Native Hawaiian, Pacific

Islander, and multiethnic adolescents and found significant improvements in stress reduction as

evidenced by self-reports and salivary cortisol measures. Nationally, only two studies

incorporated Asian American adolescents. Fung, Guo, Jin, Baer, and Lau (2016) examined the

use of MBIs to treat elevated mood symptoms with Asian and Latinx adolescents. Harris,

Steward, and Stanton (2016) examined the impact of MBIs on adolescent alcohol urge and

included a small percentage of Asian/Pacific Islander participants (12%, $n = 8$).

MBIs to treat MRBCs. To this author's knowledge, there is only one study that included

the use of mindfulness practices to address multiple risk behaviors in Pacific Islander

populations. Collier and colleagues (2018) incorporated mindfulness of self and mindfulness of

eating strategies, as one component to address obesity, stress, sleep, healthy eating, and physical

activity for youth and adults in Palau, an island country within Micronesia (located 4300 miles

southwest of O'ahu). The researchers utilized a community based participatory research (CBPR)

framework to develop, *Fit Kit Palau,* an eight-session group-based program. The study included

completing an extensive needs assessment based on the responses from two samples of adults

and high school students that encompassed residents' understanding of the problem (obesity),

preference for intervention components, methods of service delivery, interest in technology, cultural nuances, anthropometric measures (e.g., BMI, weight), screening tools for eating disorders, and questions pertaining to diet and exercise. After training local staff members as "Wellness Coaches" the authors piloted the program with a small group of participants ($n = 24$). The study provided insight into the dietary practices, culturally embedded "binge-like" eating patterns, physical activity, understanding of Palau's obesity rates, cultural factors to consider when developing a wellness program in Palau, and elaborated extensively on lessons learned. Aside from the brief description of mindfulness practices included in the programming, there was no additional discussion on MBIs.

Peer Engagement and Knowledge (PEAK) Program

PEAK is a program of Family Programs Hawai'i (FPH), and is located in Hilo, Hawai'i (see Figure 4 for FPH's organization chart). FPH is a reputable 501(c)(3) social service agency located on the islands of O'ahu and Hawai'i. The mission of FPH is to strengthen children and families involved in the child welfare system through high quality prevention and support services that prevent children from entering foster care; support children and families already involved in the foster care system; and assist youth transitioning out of foster care. PEAK is contracted by the Hawai'i State Office of Youth Services (OYS) to reduce risk behaviors (e.g., substance use, teenage pregnancy, sexually transmitted infections, truancy, delinquency, anger/violence, alienation) and strengthen protective factors (e.g., self-esteem, resilience, social emotional learning skills, cultural awareness, interconnectivity with family, friends, and the community) within vulnerable youth populations (FPH, 2018).

Based on health behavior theory, there are common risk and protective factors that explain co-varying health behaviors (Noar et al., 2008). In order to impact changes in multiple

behaviors, interventions should teach youth how to identify various risk factors and employ

adaptive strategies that will reduce unhealthy behaviors across settings (Noar et al., 2008). This

theory proposes that taking effective action on one behavior will increase the odds of taking

effective action on a second behavior, and as such, integrative interventions that employ higher

order constructs to drive changes in multiple health behaviors can be more effective at impacting

overall change (Prochaska, 2008; Prochaska et al., 2008). MBIs are theorized to aid in the

improvement of underlying processes associated with maladaptive coping strategies and negative

affective experiences that are learned as a result of chronic stress present in youth's familial,

social, medical, and community settings (Perry-Parrish et al., 2016). MBIs can serve as a

protective mechanism for youth to apply in risky situations, as it promotes self-regulation,

decision-making skills, and drives changes in multiple health behaviors.

This program evaluation was developed in collaboration with FPH. Prior to the start of

this study, I approached FPH's Clinical Director, who also served as the PEAK Program

Supervisor, and inquired about the agency's research needs. After several conversations, it

became clear that one of the agency's most pressing needs centered around developing a method

to evaluate the effectiveness of the PEAK program, as the method they were using since the

program's inception in 2011, was ineffective at measuring specific changes in multiple risk

behaviors and protective factors. After reviewing the goals specified in the abovementioned OYS

contract, and based on the aforementioned health behavior theory, the PEAK Program

Supervisor expressed a desire to measure participants' change in substance use, depression, self-

esteem, resilience, and mindfulness following the PEAK intervention. PEAK is a 12-session, six-

week, community-based group intervention for youth (ages 12-23) who live in medically

underserved communities on the island of Hawai'i. The PEAK groups take place in various low-

cost/free community settings (e.g., schools, churches) in Hilo and serve as a valuable resource for youth in this community. Its mission is to teach and empower youth to make healthier choices in their lives and is designed to provide the social-emotional tools necessary for successful decision-making (FPH, 2018).

PEAK utilizes components from two research-based curriculums, *Why Try,* which focuses on building resilience in school, home, and peer settings (Why Try, 2016) and an MBSR-adapted mindful breathing and mindfulness of body program (Le, n.d.). PEAK incorporates Why Try's visual analogies (e.g., a picture of a roller coaster to demonstrate that decisions have consequences; a picture of a pot of crabs explains how to avoid peer pressure) and multisensory approaches (e.g., group work) to teach various life skills. To address additional factors of health and well-being, PEAK also includes approximately 15 to 20 minutes of mindfulness/meditation activities in every 90-minute session (see Appendix A for a brief outline of the Why Try and MBI components). The PEAK program manager, who has extensive experience working with this population and the respective curricula, facilitates each group. Aspects of the curriculum have also been culturally adapted to reflect values of *mauli lahui* (cultural identity), *'ike piko* (personal identity), *'ike honua* (place), *'ike ho'oko* (applied achievement), and the *aloha spirit* (FPH, 2014). Over the course of eight years, PEAK has served approximately 96 youth per year, and reported an 83% reduction in substance use behaviors, 85% increase in coping skills, and 85% increase in personal self-image (FPH, 2018).

Research Questions and Conceptual Hypotheses

Within the literature, few programs have utilized MBIs to address the negative effects of multiple risk behaviors especially within Native Hawaiian and Other Pacific Islander, Asian American, and multiracial youth populations. This study is one of the first to examine the

effectiveness of using MBIs to treat MRBCs among this population, and is a collaborative endeavor with FPH to improve the services offered to one of the most underserved communities in Hilo, Hawai'i. These contributions have the potential to not only influence future prevention and early-intervention services for adolescents in Hawai'i, but may also extend to Native Hawaiian and Other Pacific Islander, Asian American, and multiracial communities nationwide. This study was a program evaluation that utilized a mixed-methods design to evaluate the effectiveness of a group-based intervention that incorporates MBIs for adolescents who experience multiple health risks. The research questions addressed in this study were:

1) Does participation in the PEAK intervention change adolescents' alcohol, tobacco, and illicit drug use?

2) Does participation in the PEAK intervention change adolescents' depressive symptomatology?

3) Does participation in the PEAK intervention change participants' well-being as measured by self-esteem, resilience, and mindfulness?

4) How do participants describe their experiences of engaging in a developmentally adapted MBI?

It was hypothesized that post-intervention, youth would report:

1) Reductions in alcohol, tobacco, and illicit drug use.

2) Reductions in depressive symptomatology.

3) Overall changes in well-being as measured by higher self-esteem, greater resilience, and more mindfulness.

4) Positive experiences with a developmentally adapted MBI and improved ability to use mindfulness as a coping strategy.

Method

This is a program evaluation with a mixed-methods design that included two time points of data collection to examine the effects of the PEAK intervention using pre-/posttest measures of substance use, depression, self-esteem, resilience, and mindfulness. Responses from two subsets of participants, who engaged in a focus group ($n = 11$) and composed gratitude letters ($n = 12$), were analyzed using Braun and Clarke's (2006) thematic analysis approach.

Participants

A total of 66 youth, who resided in Hilo, Hawai'i, participated in five PEAK groups (approximately 12-14 youth per group) from October 2016 to December 2017. Of these youth, 11 declined to be in the study, as indicated by positive endorsement of "do not include in study" checkbox on pre-/posttests, and four surveys were excluded due to substantial missing data, leaving 51 participants (26 males, 25 females) enrolled in this study. Participants ranged in age from 12 to 23 years old ($M = 17.37$ years, $SD = 3.89$) and spanned grades seven to college (39.2% were in the 12th grade). Youth were racially/ethnically diverse with 43.14% identifying as bi/multiracial with Native Hawaiian ancestry (e.g., Native Hawaiian, Samoan, Irish, German, Chinese, and Filipino), 9.8% identifying as bi/multiracial without Native Hawaiian ancestry (e.g., Japanese, Latinx, White), 15.7% identifying as Asian alone (e.g., Filipino, Japanese, or Chinese), 15.7% identifying as Native Hawaiian/Other Pacific Islander alone (e.g., Native Hawaiian, Micronesian, Samoan), 9.8% identifying as White, 3.9% identifying as Latinx alone, and 2.0% identifying as some other race. Almost two-thirds (62.8%) reported having a GPA of 2.0 or above. One-third (33.3%) of the sample reported that their parents had attended college and/or had a college degree, and 35.3% of the youth reported that their parents had completed high school. 23.5% reported having no other children under the age of 18 residing in their

homes, which was followed by 17.7% having two or four, and 15.7% having five or more (SD =

1.82). While majority of youth (74.5%) reported being unsure of their family's average

household income, 17.64% reported averages between $25,000 and $54,999 and 7.84% reported

averages below $25,000. Demographics for all participants are detailed in Table 1.

   Participants in qualitative study. Approximately one-third of the total sample ($n = 23$)

participated in either a focus group or provided feedback in the form of gratitude letters

addressed to the group facilitator. In all, participants in the qualitative study were 91.3% male,

47.8% bi/multiracial, and in the 10th-12th grades. More specifically, there were 11 focus group

participants (all males), who were 17-19 years old, in the 10th-12th grades, and identified as

Native Hawaiian alone ($n = 3$), White ($n = 3$), bi/multiracial ($n = 2$), Other Polynesian/Pacific

Islander ($n = 2$), and Other ($n = 1$). The 12 participants who wrote gratitude letters (10 males, 2

females), were16-17 years old, in the 10th-12th grades, and identified as bi/multiracial ($n = 9$),

Asian alone ($n = 2$), and Other Polynesian/Pacific Islander ($n = 1$). See Table 2 for the

demographics of participants who were included in the qualitative study.

Procedures

   Relationship-building/training. Due to geographical barriers that did not allow for my

presence at the PEAK groups or for the administration of the study questionnaires, the PEAK

Program Supervisor and PEAK Program Manager were trained on the nature of this study,

recruitment procedures, administration of the pre-/posttest measures, risk assessment protocol,

and confidentiality practices (see Appendix D). Due to unexpected and extenuating

circumstances, the focus group was facilitated by FPH's postdoctoral fellow in clinical

psychology, who was trained on the respective protocol. Study materials, such as copies of the

pre-/posttest surveys, were given to me when I returned to Hawai'i to meet with the PEAK

Program Supervisor and Manager and deidentified materials were emailed to me in a secure and password protected file. Throughout the course of the study, we held in-person meetings (when able) and communicated via phone, video-conferencing, and e-mail to provide updates, discuss concerns, engage in collaborative problem solving, and ensure adherence to study protocol. A memorandum of understanding (MOU) between FPH and myself was obtained and delineated the roles and responsibilities of each entity (see Appendix C).

Participant eligibility, screening and enrollment. Study participants were recruited when they enrolled in PEAK. For the quantitative study, youth were eligible for the study if they were between the ages of 12 and 23, fluent in English, resided in the Hilo-Laupahoehoe-Waiakea and Ka'u-Kea'au-Pahoa school districts, and did not exceed criteria for "at-risk level II" as defined by the State of Hawai'i OYS (OYS). At-risk level II includes youth who may be state offenders (chronically truant, runaway), involved in gangs, violence, or substance use, and/or experiencing family stressors including abuse or neglect. PEAK participants were typically referred to the program by their teachers, counselors, or other referral sources. Youth were excluded from the study if they had participated in the PEAK program before. Participants received a $10 gift card compensation for completing the pre- and post-measures.

Participants for the focus group and gratitude letters were recruited from the overall sample of participants via voluntary and convenience sampling. Participants voluntarily wrote gratitude letters to the PEAK program manager after completing their group. Due to feasibility concerns, focus group participants were recruited from one PEAK group. Focus group participants were entered into a raffle and five received an additional $10 gift card.

Participant consent. PEAK participants ages 12 to 17 were given a parental consent form (see Appendix E) along with their PEAK information packet. The study consent form

included information about the study (e.g., privacy/confidentiality, consent to audio-recording,

pre-/posttests, and focus group) and required signed consent from the parent/legal guardian, and

signed assent from the youth. To reduce the number of forms and adhere to PEAK's consent

form protocol, the child and parent/legal guardian forms were combined. Participants were asked

to return required forms to the program manager at the start of the first session. Adult

participants (18-23 years old) provided their written consent on site and were subsequently

enrolled in the study (see Appendix F). The PEAK program manager marked the appropriate box

on the pre- and post-measures, indicating consent to participate in the study.

Participants were informed of the nature of the focus group (e.g., time commitment,

general topic, audio-recorded, incentives) at the time of recruitment. Participation in the focus

group did not affect participant's ability to participate in the remainder of the study, the PEAK

intervention, or receipt of incentives for completing the pre-/posttest measures. The PEAK

program manager reminded study participants about the focus group two weeks in advance and

created a list of attendees for our records.

Data collection timeline. The data collection period spanned 14-months (October 2016

to December 2017), drawing from a total of five PEAK groups over the course of five quarters.

The program manager allocated 15 to 20 minutes at the start of the first session and end of the

last session to complete the pre-/posttest measures, all of which were administered via a paper

and pencil survey. To address PEAK's aim to obtain additional insight into participants'

experience with MBIs, all youth from one group were recruited for one 90-minute focus group

that took place one-week after the last session and was facilitated by FPH's postdoctoral fellow

in clinical psychology. To supplement this data, additional gratitude letters written by youth who

completed the program were included in the study to provide further understanding of their

experiences with MBIs. This study was approved by the University of San Francisco Institutional

Review Board (IRB) on October 18, 2016 and ensures the rights and welfare of human subjects

were protected during their participation in this study (see Appendix B for a copy of the IRB

proposal).

Measures

Demographic information. All participants completed an eight-question demographic

survey at the start of the first session. The demographic survey contained questions regarding

age, year in school, GPA at baseline[1], race/ethnicity, gender identity, perceived household

income, and additional contextual information (e.g., highest level of education among

parents/guardians). See Appendix G for a copy of this measure.

Substance use. To remain consistent with PEAK's previous substance use reporting

measures, The Student Survey on Alcohol, Tobacco, and Other Drugs-Behaviors (SSATOD-B)

was used in this study. The SSATOD-B was developed by Johnston and colleagues (2002) as a

10-item self-report pre-/posttest that measures recent use (past-30 days) of alcohol, tobacco, and

other drug use among 8th, 10th, and 12th graders. The SSATOD-B has demonstrated adequate

reliability and validity for diverse populations and yields Cronbach's alpha coefficients of .86-

.91 for cigarette use, .72-.78 for alcohol use, .78-.84 for marijuana use, and .49-.72 for other

illicit drug use over the past 30 days (Johnston et al., 2002). In this study, the pre-test Cronbach's

alpha was .76 for cigarette/e-cigarette use and .71 for all other substances. The post-test

Cronbach's alpha was .58 for cigarette/e-cigarette use and .79 for all other substances. Items

related to substance use are assessed on a 6-point Likert scale ranging from 0 (*0 occasions*) to 5

(*20 or more occasions*) with the exception of cigarette use, which ranges from 0 (*not at all*) to 5

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[1] GPA was not measured at post-intervention since it is unlikely that GPA scores would significantly change over
the course of a brief six-week intervention.

(*more than one pack per day*). This survey has been culturally and linguistically adapted for

participants in this study, such that item two on the pre- and posttest were modified to include the

Hawaiian/local term for marijuana ("pakalolo"), which may be more familiar to youth in

Hawai'i. In addition, since research indicates that youth in Hawai'i endorse one of the highest

prevalence rates of e-cigarette use in the country (Wills et al., 2015), a separate item was added

to assess for e-cigarette use. Program satisfaction items on the posttest were eliminated since

FPH independently conducts its own satisfaction survey.

The University of Michigan Institute for Social Research has used the SSATOD in the

national Monitoring the Future (MTF) survey for the past 14 years and the National Institute on

Drug Abuse (NIDA) has used the survey for over 28 years (Johnston, O'Malley, & Bachman,

2002). The SSATOD-B has been normed on racially/ethnically diverse 8th, 10th, and 12th graders

and provides insight into the annual substance use profiles of high school aged-youth. Items are

scored individually for the pre- and posttest by tabulating the frequencies of use (e.g., 5

responses of "3 to 5 occasions"). In general, higher scores indicate higher frequency of alcohol,

tobacco, and other drug use. See Appendix H for this measure.

Depression. The Kutcher Adolescent Depression Scale-11 (KADS-11; Brooks,

Krulewicz, & Kutcher, 2003) is an abbreviated form of the original KADS-16 and has the

highest internal consistency (Cronbach's alpha = .84) of all three KADS instruments. In this

study, the Cronbach's alpha for pre- and posttest were both .90. The KADS-11 is comparable to

other established measures of child/adolescent depression (e.g., Children's Depression Rating

Scale-Revised) and is a valid and sensitive measure of changes in depression severity over time.

The KADS-11 has been validated in diverse adolescent populations (ages 12-17 years) and is

often used by mental health practitioners and pharmaceutical and research professionals who are

attempting to establish efficacy for adolescent depression treatments. The KADS-11 measures depressive symptomatology experienced within the past week, uses colloquial terms, and can be completed and hand scored quickly and efficiently. It is scored on a 4-point Likert scale, ranging from 0 (*hardly ever*) to 3 (*all of the time*), with higher total scores indicating higher levels of depression and lower scores indicating lower levels of depression. Due to the lack of validated cut-off scores, boundaries were determined based on the scores associated with the 4-point Likert scale, with "none" ranging from 0 to 4, "mild" ranging from 5 to 10, "moderate" ranging from 11 to 21, and "severe" depression scores ranging from 22 to 33. Items 3 and 8 were modified to exclude verbiage related to "before getting sick," since it does not apply to the parameters of this study. See Appendix I for this measure and Appendix D for suicide risk protocol.

Self-esteem. The Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965) is a widely used self-report pre-/posttest measure of adolescent and adult self-esteem that has been translated into 28 languages. The RSES is used to assess how individuals feel about themselves in comparison to others and describes a one-dimensional measure of global self-esteem. Items were designed to represent a continuum of self-worth such that individuals with low self-esteem would endorse certain items (e.g., "at times I think I am no good at all") and individuals with high self-esteem would endorse other items (e.g., "on the whole I am satisfied with myself"). The RSES yields a test-retest reliability of 0.82 and an internal consistency (Cronbach's alpha) of 0.88. In this study, the Cronbach's alpha for pre- and posttest were .80 and .88, respectively. It consists of 10-items scored on a 4-point Likert scale from 0 (*strongly agree*) to 3 (*strongly disagree*); items 2, 5, 6, 8, and 9 are reverse scored. A total scale score is obtained by summing all 10-item scores; a higher sum of scores indicates greater levels of self-esteem, with "low" self-esteem scores ranging from 0 to10, "moderate" self-esteem from 11 to 20, and "high" self-

esteem from 21 to 30. See Appendix J for this measure.

Resilience. The Children and Youth Resiliency Measure-12 (CYRM-12; Ungar & Liebenberg, 2011) is an abbreviated version of the CYRM-28 that yields a satisfactory Cronbach's alpha of .84. In this study, the Cronbach's alpha for pre- and posttest were .86 and .87, respectively. It is a self-report measure of resilience that captures processes related to resistance to risk impact and includes youth's cultural and contextual factors (e.g., individual, peer, family, and community-level resources). The CYRM-12 was created for use in survey research as a shortened alternative to the full 28-item measure, which proved time consuming in numerous surveys (Liebenberg, Ungar, & LeBlanc, 2013). It was also validated among a diverse sample of clinical (e.g., child welfare, juvenile justice, community programs) and non-clinical (e.g., school-children) populations ages 10 to 18 years old. The CYRM-12 is scored on a 5-point Likert scale from 1 (*does not describe me at all*) to 5 (*describes me a lot*), and a total score is obtained by summing all item scores with higher total scores indicating greater resilience and capacity to adapt to varying socio-ecological contexts. Due to the variability of resilience between contexts, the authors have not established set cut-off scores and instead recommend establishing thresholds that contrast high and low scorers within each sample. Based on the language used in the CYRM manual, scores were indicative of either "low" resilience (0 to 24), "moderate" resilience (25 to 36), "high" resilience (37-48), or "exceptional" resilience (49 to 60). Sample items included statements such as "I know where to go in the community to get help," and "I enjoy my cultural and family traditions." See Appendix K for this measure.

Mindfulness. The Applied Mindfulness Process Scale (AMPS; Li, Black, & Garland, 2015) is a self-report measure used to quantify how participants in MBIs apply mindfulness practices when experiencing challenges in daily life. The AMPS consists of 15-items, endorsed

on a 5-point Likert scale from 0 (*never*) to 4 (*almost always*) and are consistent with concepts of applied mindfulness such as decentering, positive emotional regulation, and negative emotional regulation. It has demonstrated strong internal consistency ranging between .91-.94 and adequate nomological validity with related constructs (e.g., depression, trait mindfulness, anxiety, stress, general well-being) among college age students. In this study Cronbach's alpha for pre- and posttest were .95 and .96, respectively. To assess mindfulness as a process, the AMPS can be used as a standalone measure, or it can be used concurrently with other mindfulness measures to establish mindfulness as a construct. It is especially useful for active mindfulness practitioners or participants in MBIs. Scores can be tabulated based on each individual factor: (a) decentering (items 1, 3, 12, 13, 15), (b) positive emotional regulation (items 4, 7, 9, 11, 14), and negative emotional regulation (items 2, 5, 6, 8, 10) to obtain subscale of scores ranging from 0 to 20. Scores can be summed based on all 15-items to obtain a score that ranges from 0 to 60, with cut-off scores indicative of "rarely" (0 to 15), "sometimes" (16 to 30), "often" (31 to 45), and "almost always" (46 to 60) using mindfulness. In both contexts, elevated scores suggest greater application of mindfulness skills to daily functioning. Sample questions include, "I used mindfulness practice to observe my thoughts in a detached manner," and "I used mindfulness practice to stop reacting to my negative impulses." See Appendix L for this measure.

Experience with MBIs. Themes from one 90-minute focus group and 12 gratitude letters were thematically analyzed to obtain additional insight into participants' experiences with MBIs. The focus group questions were developed in collaboration with FPH's Program Supervisor to ascertain information related to youth's experiences with learning about MBIs as well as their likelihood to continue practicing in the future. Sample focus group questions included, "What was your experience with mindfulness or meditation prior to the PEAK program?" and "Tell me

about your experience of learning about and practicing mindfulness during the PEAK sessions." Gratitude letters were voluntarily written by participants and addressed many of the questions posed in the focus group regarding their experiences with MBIs. See Appendix M for sample focus group questions.

Data Analysis Plan

The quantitative and qualitative data collected from this analysis describe changes in variables of health risk (e.g., substance use and depressive symptomatology) and protective factors (e.g., self-esteem, resilience, and mindfulness) experienced by PEAK participants. Descriptive data were summarized using means and standard deviations for continuous measures and frequency counts or percentages for categorical variables. Pearson product-moment correlations were run to determine the relationships between all of the variables at both baseline and post-intervention. Paired *t*-tests were used to examine difference in substance use behaviors (alcohol, tobacco, and illicit drug use), depressive symptomatology, self-esteem, resilience, and mindfulness at baseline and post-intervention. Exploratory analyses were conducted to identify whether gender served as a moderator on all variables at baseline and post-intervention. Independent samples *t*-tests were used to explore gender and age differences on continuous variables of depression, self-esteem, resilience, and mindfulness. Chi-square tests were used to analyze gender and age differences on the categorical variable of substance use at baseline and post-intervention.

To analyze the qualitative data from the focus group and gratitude letters, Braun and Clarke's (2006) thematic analysis framework was used to ascertain participants' experiences of engaging in MBIs. Thematic analysis offers a systematic method for identifying, organizing, and understanding data rather than focusing on frequencies or word counts. In this analysis, there was

a focus on an essentialist/realist framework, which conveys the experiences, meaning, and reality of the participants. A theoretical, rather than inductive, approach was also taken as it was driven by the research question as opposed to being solely data-driven. Themes, or patterns of meaning, that existed across the data set were established using Braun and Clarke's (2006) six step-method of: (a) familiarizing one's self with the data set by transcribing data verbatim and noting down initial ideas; (b) generating initial codes and collating relevant data; (c) collating codes into potential themes; (d) reviewing themes and generating a thematic map; (e) naming and defining themes; and (f) developing a full description of themes, examples, analyses, and relation to the research question and literature.

For the focus group, I transcribed the audio recording and reviewed the transcript twice for accuracy, and then noted reflections regarding the observed interactions between the participants and facilitator. I reviewed the data and identified patterns and culturally specific nuances (e.g., all male group; use of "ma'am" instead of "Aunty" when describing the facilitator) which I developed into potential themes. Once I created a list of potential themes, I analyzed them further, collapsing similar themes together and differentiating others, which led to the creation of a thematic map pertaining to youth's personal, group-, and community-based experiences with the process of learning about mindfulness/meditation. After reviewing the data for a third time, I named and defined the themes and created full descriptions, which included specific quotes that illustrated the theme and related the data back to the research question. A similar process was utilized for the gratitude letters, excluding the transcription process since copies of the letters were already printed out.

Results

Descriptives

Substance use. At baseline, 29.41% ($n = 10$ females, $n = 5$ males) of participants reported using at least one-substance within the past 30 days, with use ranging from one type of substance (e.g., cigarette or alcohol only) to five (e.g., cigarettes, e-cigarettes, marijuana, alcohol, and inhalants); average types of substances used was 2.07 (SD = 1.41). Of the overall sample, 19.61% endorsed cigarette use, 9.80% endorsed e-cigarette use, 13.73% endorsed marijuana use, 13.73% endorsed alcohol use, 9.8% endorsed being drunk or high on alcohol, 3.92% endorsed inhalant use, and 1.96% endorsed steroid use. After PEAK, 33.33% ($n = 9$ females, $n = 8$ males) of participants endorsed use of at least one substance, with use ranging from one substance to four (M = 1.88, SD = 2.12). E-cigarette (9.80% to 11.76%) and alcohol use (13.73% to 17.65%) increased whereas inhalant (3.92% to 0%) and steroid (1.96% to 0%) use decreased. Rates of cigarette use (19.61%), marijuana use (13.73%), and being drunk or high on alcohol (9.80%) remained the same.

Participants who endorsed substance use ranged in age from 16 to 23 years old, and 55.56% of youth who positively endorsed substance use were under the age of 18. Of the 15 participants who endorsed substance use at baseline, one participant denied continued use at post-intervention, whereas 14 reported continued use. Three participants who denied use at baseline endorsed use at post-intervention. There were no statistically significant mean differences on youth's substance use scores based on gender at baseline or post-intervention.

Depression. At baseline, 41.17% reported "moderate" (35.29%, $n = 18$) or "severe" (5.88%, $n = 3$) levels of depression symptoms as indicated by the KADS-11, with 19.61% ($n = 8$) reporting varying levels of ideation around self-harming behaviors and suicidality. The

remaining depression scores fell in the "mild" or "none" ranges, with 29.41% (n = 15) of youth endorsing each category. Overall, the percentage of youth experiencing "moderate" or "severe" levels of depressive symptomatology decreased from 41.17% (n = 21) to 13.72% (n = 7). In addition, whereas 19.61% of youth in the study endorsed suicidal ideation at baseline, 11.76% endorsed these thoughts after participating in PEAK. There were no statistically significant mean differences on youth's depression scores based on gender at baseline or post-intervention.

The *suicide risk protocol* that was developed for this study was utilized by the PEAK program manager and supervisor, at both baseline and post-intervention. As such, the PEAK program manager and supervisor assessed for severity, risk, intent, and plan; developed safety plans as appropriate; and provided specific youth with referrals for mental health services post-intervention. After consulting with the program director, it was understood that participants who endorsed active suicidal ideation reported vague plans of self-harm (e.g., running away, thoughts of getting into accidents) and denied specific intent or plan. All participants who endorsed any level of suicidality were able to verbally contract for safety and attended the remaining groups.

Self-esteem. At baseline, PEAK participants demonstrated "high" levels of self-esteem as measured by the RSES. On the RSES, only one participant (1.96%) scored in the "low" self-esteem range, while the remaining participants scored in the "moderate" (66.67%, n = 34) or "high" ranges (31.37%, n = 16). The results suggest improvement in self-esteem scores from baseline (31.37% endorsed "high" self-esteem) to post-intervention (50.98% endorsed "high" self-esteem). There were no significantly significant mean differences on youth's self-esteem scores based on gender at baseline or post-intervention.

Resilience. On the CYRM-12, 3.92% (n = 2) endorsed "moderate" levels of resilience and 1.96% (n = 1) endorsed "low" levels of resilience, while the remaining youth endorsed

"high" (47.06%, *n* = 24) to "exceptional" (47.06%, *n* = 24) levels of resilience. The results suggest improvement in resilience from baseline (47.06% endorsed "exceptional" resilience) to post-intervention (70.59% endorsed "exceptional" resilience). There were no statistically significant mean differences on youth's resilience scores based on gender at baseline or post-intervention.

Mindfulness. With regards to mindfulness, 17.65% (*n* = 9) of youth "rarely" applied mindfulness at baseline, whereas the majority of youth endorsed some understanding of and application of mindfulness skills ranging from "sometimes" applying mindfulness (37.25%; *n* = 19) or "almost always" (7.84%; *n* = 4). The results suggest that the PEAK intervention improved youth's application of mindfulness whereas at baseline only 7.84% endorsed "almost always" using mindfulness, 35.29% endorsed "almost always" using mindfulness post-intervention. There were no statistically significant mean differences on youth's mindfulness scores based on gender at baseline or post-intervention.

Health risk factors. The number of health risk factors reported at baseline and post-intervention were also tabulated. Health risk factors were defined as positive endorsement of alcohol, cigarette, e-cigarette, marijuana, inhalant, or steroid use within the past 30 days, moderate or severe levels of depressive symptomatology, report of engaging in self-injurious behaviors, and/or suicidal ideation (SI). As evidenced in Figure 5, at baseline, 39.22% (*n* = 20) endorsed no-risk factors, 60.78% (*n* = 31) endorsed one-risk (e.g., depression, passive SI, cigarettes, alcohol, or marijuana use), while the remainder endorsed two (11.76%, *n* = 6) to seven risks total (1.96%, *n* = 1). At post-intervention, 56.86% (*n* = 29) endorsed no-risk factors, 13.69% (*n* = 8) endorsed one-risk, and the remainder endorsed two (15.69%, *n* = 8) to five risks (1.96%, *n* = 1).

Health promoting factors. The number of health promoting factors, as measured by the positive endorsement of resilience ("high" or "exceptional" ranges), self-esteem ("high"), and mindfulness ("often" or "almost always"), were tabulated at baseline and post-intervention. As evidenced in Figure 6, at baseline, 3.92% ($n = 2$) of youth endorsed no protective factors, 35.29% ($n = 18$) endorsed one single protective factor, 47.06% ($n = 24$) endorsed two protective factors, and 13.73% ($n = 7$) endorsed all three protective factors. At post-intervention 1.96% ($n = 1$) endorsed no protective factors, 7.84% ($n = 4$) endorsed one, 49.02% ($n = 25$) endorsed two, and 41.18% ($n = 25$) endorsed all three protective factors.

Intercorrelations. Table 3 indicates intercorrelations for all study variables at baseline and post-intervention. In total, there were nine statistically significant correlations at baseline and post-intervention, five of which were correlated with self-esteem. There was a moderate inverse correlation between self-esteem and depression at baseline ($r = -.49$) and at post-intervention ($r = -.56$), suggesting that as self-esteem scores increased over the course of the intervention depression scores decreased. As would be expected, self-esteem was moderately associated with resilience at baseline ($r = .39$) and at post-intervention ($r = .42$), suggesting that as self-esteem scores increased resilience scores increased as well. Interestingly, there was a small positive correlation between self-esteem and mindfulness at post-intervention ($r = .29$) but no statistically significant correlation at baseline.

Moderate positive correlations also existed between mindfulness and resilience at baseline ($r = .48$) and at post-intervention ($r = .45$), suggesting that as mindfulness scores increased so did resilience scores. At baseline, there was a small inverse correlation between mindfulness and depression ($r = -.28$), suggesting that as mindfulness scores increased depression scores decreased; at post-intervention, there were no statistically significant

correlations between these two variables. At post-intervention, there was a moderate inverse association between resilience and depression ($r = -.39$), but no statistically significant association at baseline.

Analyses

Gender differences. Independent samples *t*-tests were used to explore gender differences on continuous variables of depression, self-esteem, resilience, and mindfulness at baseline and post-intervention. No statistically significant differences were found between males and females on any of the dependent variables. A chi-square test was used to analyze gender differences on the categorical variable of substance use at baseline ($\chi^2(1) = 2.65$, p $= 0.10$) and post-intervention ($\chi^2(1) = .157$, p $= 0.69$). There were no statistically significant associations between gender and substance use.

Age differences. Independent samples *t*-tests were used to explore age differences on continuous variables of depression, self-esteem, resilience, and mindfulness. No statistically significant differences were found between adolescents (12 to 17 years old) and adults (18 to 23 years old) on dependent variables of depression, resilience, or mindfulness at baseline and post-intervention. With regards to self-esteem, there were no statistically significant differences at baseline; however, at post-intervention adolescents (M $= 22.81$, SD $= 4.95$) demonstrated statistically significantly higher self-esteem than adults (M $= 19.16$, SD $= 3.91$), $t(49) = 2.75$, p $= .008$. A chi-square test was used to analyze age differences on the categorical variable of substance use at baseline ($\chi^2(1) = .81$, p $= 0.37$) and post-intervention ($\chi^2(1) = .17$, p $= 0.68$). There were no statistically significant associations between age and substance use.

Substance use. Paired *t*-tests were used to examine differences in the types of substances used at pre- and post-intervention. Frequency counts were also used to compare percentages of

substances used at pre- and post-intervention. Substances included in this measurement included cigarette, e-cigarette, marijuana, alcohol, cocaine, inhalants, steroids, and club drugs (e.g., ecstasy, GHB, and Rohypnol). There were no statistically significant differences in the total number of substances used at baseline (M = .65, SD = 1.16) and post-intervention (M = .63, SD = 1.02); $t(50) = .17$, p = .87.

Depression. Paired *t*-tests were used to examine differences in depressive symptomatology pre- and post-intervention. There was a statistically significant reduction in depressive symptomatology between baseline (M = 9.35, SD = 6.77) and post-intervention (M = 4.96, SD = 5.83); $t(50) = 7.78$, p < .001.

Self-esteem. Paired *t*-tests were used to examine differences in self-esteem pre- and post-intervention. There was a statistically significant difference in the scores for self-esteem with youth endorsing "moderate" levels of self-esteem at baseline (M = 19.27, SD = 4.37) and "high" levels of self-esteem at posttest (M = 21.45, SD = 4.88); $t(50) = -3.81$, p < .001.

Resilience. Paired *t*-tests were used to examine differences in resilience pre- and post-intervention. There was a statistically significant difference in the scores for resilience with youth endorsing "high" resilience at baseline (M = 48.25, SD = 7.58) and "exceptional" resilience at post-intervention (M = 51.88, SD = 6.45); $t(50) = -5.23$, p < .001.

Mindfulness. Paired *t*-tests were used to examine differences in mindfulness pre- and post-intervention. There was a statistically significant difference in mindfulness scores with youth endorsing that they "sometimes" applied mindfulness skills at baseline (M = 29.65, SD = 12.31) and "often" applied mindfulness skills at post-intervention (M = 39.53, SD = 12.91); $t(50) = -7.05$, p < .001. See Table 4 for baseline and post-intervention scores and results of the paired *t*-tests for variables of substance use, depression, self-esteem, resilience, and mindfulness.

Thematic Analysis

To examine the research question regarding participants' experience of engaging in a developmentally adapted MBI, responses were garnered and analyzed from one focus group ($n =$ 11) and 12 gratitude letters, resulting in feedback from 23 different PEAK participants. Braun and Clarke's (2006) thematic analysis method was used to develop codes and analyze subsequent themes. The codes and themes from the focus group and gratitude letters were derived separately; see Table 5 for a compilation of the themes. From the focus group and gratitude letters, four shared themes emerged: (a) mindfulness techniques, (b) using mindfulness as a positive coping strategy for stress and negative emotions, (c) benefits of mindfulness practice, and (d) facilitator factors. Focus group participants responded to specific questions regarding their experience with mindfulness, and as a result, themes pertaining to youth's (a) initial challenges with mindfulness/meditation, (b) improved decision-making processes and choices, (c) and integration of mindfulness into daily life emerged. From the gratitude letters, youth expressed their (a) gratitude for the group, (b) resilience factors, and (c) enhanced self-esteem. The following will detail shared themes, respective themes from the focus group and gratitude letters, and select participant responses.

Shared themes. In the focus group and gratitude letters, mindfulness and meditation were used interchangeably and was defined by the participants as "a process used to calm the mind and body especially when one is stressed or facing difficult situations." Participants identified specific mindfulness strategies that were helpful, elaborated on the ways in which they used mindfulness as a positive coping strategy for stress and negative emotions, identified the myriad of benefits that they experienced from practicing mindfulness, and reported on the how the facilitator's unique qualities contributed to their success in the group.

Mindfulness techniques. Participants described the specific techniques and timeframes in which they employed mindfulness/meditation strategies. For example, participants reported that they settled into a comfortable position (sitting or lying down), focused on their breathing and the present moment, relaxed, and destressed their bodies using body scans. As a male participant expressed in the focus group, "I learned how to just clear [my] mind of all the thoughts that [I] had throughout the day and try to focus on [my] breath and how to calm [my]self." As another male participant wrote in a gratitude letter, "I liked to imagine it like a game and that a laser is scanning my body up and down through our whole body." Youth also discussed the ways in which they were instructed to "try to see what you're thinking," so that they could nonjudgmentally envision their thoughts pass by and focus on the present moment as opposed to worries related to the past or future. While some participants practiced mindfulness/meditation in class only, majority of participants practiced in their homes and rooms (e.g., in bed before going to sleep). The amount of time spent meditating outside of class varied from 30 minutes one time only, to five minutes every day, to 10 to 15 minutes every day.

Mindfulness/meditation as a positive coping strategy. All participants reported on the utility of mindfulness/meditation as a positive coping strategy for stress, especially when they found themselves in risky situations (e.g., conflict with others, peer pressure). They also described other common situations in which they used mindfulness, such as prior to tests or when they had difficulty falling asleep. As a male focus group participant articulated:

Once she...demonstrated how to do mindfulness and meditations and stuff like that, I would gather all the information she gave us, and I wouldn't just practice it here, I would practice it at home because it helps to cope with stress...it's a positive coping skill.

Youth experienced mindfulness as a positive coping strategy that they learned in the

PEAK groups and then transferred to other aspects of their lives. This sentiment was echoed in a gratitude letter by a female participant, which stated, "[I learned] how to keep calm and to breathe which helps me get through things. I used to have a hard time keeping calm but now I try to use what I have learned before tests or when I am angry." Mindfulness, therefore, served as a strategy that youth could employ to regulate their distressing emotions when faced with stressors at school and at home. Practicing mindfulness enabled youth to pause, take a deep breath, and organize their thoughts. As another male focus group participant shared:

> I try to practice mindfulness if I get bad news or something. I just think about running away from this place sometimes. I just try to calm myself down, [and] like how he said at night when it's super quiet, I just try to meditate and clear my mind and try to tell myself to calm down and just try to cope with it. It helps me manage my stress on a daily basis.

In this case, mindfulness was used as an adaptive way to respond to distressing news and reduce engagement in harmful and risk-taking behavior such as running away. Mindfulness does not necessarily stop distressing thoughts from coming; however, it does provide a way to respond to thoughts in helpful rather than harmful ways. As another male focus group participant reported:

> I would use it when I'm having a bad day or when something comes up. So like one of your good friends or somebody passed away, [I would use it] to try to cope with it…cope with not having a melt down and try to just be calm and relax instead of getting all angry and doing something that you might regret in the future.

This quote illustrates how a participant has integrated mindfulness as part of his grieving process. The act of engaging in mindfulness provides youth with a strategy that not only reduces reactivity, but also enhances their sense of control in situations that often seem unfair and

uncontrollable. Mindfulness, therefore, serves as a positive coping strategy for negative emotions that arise due to stressful situations and adverse experiences.

   Benefits of mindfulness practice. Participants reported experiencing improvements in five domains of functioning: *cognitive, behavioral, emotional, physiological,* and *interpersonal*. *Cognitively,* participants reported improved decision-making processes, patience, focus, clarity, organizational skills, self-awareness, and the ability to let go of negativity. As one participant described, "it's a way to think out your actions and organize your thoughts." Other participants also shared how practicing the meditations, "helped me to clear my mind and to let go of all of the negative things." *Behaviorally*, participants described improvements to specific aspects of their life, such as their ability to fall asleep faster. As indicated by a participant, "before [this] mindfulness training, I was always going to sleep late and coming to school exhausted." PEAK participants also Participants also reported on and provided examples of the healthier/less risky choices that they made (see "improved decision-making processes and choices" theme below).

   Emotionally, participants felt less stressed and more relaxed. In general, participants felt happier, calmer, and more hopeful about their current circumstances and future. Participants disclosed how they used the breathing techniques "…if we're mad or shy to help us to release all of the stress and pain," and how after learning how to "...stop and think, I've found that I am happier." Although this is based on self-report alone, *physiologically*, participants noticed changes in the ways in which their bodies and minds felt. For example, as a participant described, "it's like relaxing, soothing your body, trying to clear you head out." As echoed by another participant, "it helps you calm your body when you're stressed out or when you're angry at people…[prior to PEAK], I never thought it would work until I had this class..." They noted feeling calmer because their minds and bodies were less stressed and overwhelmed. Lastly,

interpersonally, learning about mindfulness/meditation served as a way to bring the group closer

together and foster collective resilience and self-esteem. By the end of the group, participants felt

as if they held a shared understanding of and practice with one another. For example, participants

described "learning new things about...my classmates," feeling "...closer to myself and to my

classmates," and better able to "assimilate with my friends much more and to feel more

comfortable with the class."

  Facilitator factors. Participants consistently expressed their deep level of appreciation

for the group facilitator. Participants addressed the gratitude letters to "Aunty [First Name]"

which is a casual and culturally sensitive way to address elders in the community. It emphasizes

Hawaiʻi's cultural values of *ʻohana* (family), which extends beyond the family unit to also

include family friends and community members. Focus group participants also referenced the

group facilitator in this way, which is in stark contrast to the way in which they referenced the

postdoctoral fellow ("ma'am") who ran the focus group. Although "ma'am" is a respectful term,

it demonstrates a different level of relationship between the youth and the facilitator. Within the

gratitude letters, youth identified specific qualities such as the facilitator's hard work and

dedication to the program, as evidenced by statements such as, "[I] could see that you really put

work into what you taught us and that you do dearly care about us." Participants culturally

identified with the facilitator with regards to racial/ethnic background and life circumstances. As

a participant wrote, "thank you for sharing your story with us, even if it almost made me cry. It

inspired me to know that it is possible to overcome challenges." Similarly, participants

recognized the facilitators' ability to "share with us your life story without any tears," which was

viewed as a strength. The facilitator, whom they also described as local, personable, humorous,

engaging, knowledgeable, and challenging, was an integral component to youths' positive experiences of PEAK.

  Focus group themes. As aforementioned, themes specific to the focus groups emerged and included: (a) initial challenges with mindfulness/meditation, (b) improved decision-making processes and choices, (c) and integration of mindfulness into daily life.

  Initial challenges with mindfulness/meditation. Initially, participants expressed difficulty engaging in mindfulness/meditation due to their unfamiliarity with the practice and the level of psychosocial stressors that they experienced at baseline, which made it more difficult to regulate their affect and calm their minds. At the start of PEAK, participants reported more familiarity with the practice of meditation, due to exposure from media (tv/movies), awareness of religious connotation (e.g., monks), and school activities; however, for most participants, this was their first direct exposure to the practice. As illustrated in comments by two male participants, "I really didn't know about it. Like mindfulness, I didn't know. And meditation, I've just like seen it on the news and monks meditating," and "I didn't really know much about mindfulness or meditating until...these classes that we've been going through. This is all new to me…I did see it in movies but didn't think much about it."

  Furthermore, participants also experienced multiple psychosocial stressors, especially with regards to difficulties in school, financial hardships, missing family/friends, relational issues with family/friends, receiving "bad news," coping with grief and loss, and ideation of running away. Participants reported feeling as if they were too active, restless, and talkative. Participants stayed up late, reported low self-esteem, and described "taking the easy way out" of situations. As a result, participants expressed hesitancy to learn about mindfulness/meditation. According to participants, the most challenging aspects included practicing stillness, clearing the mind, and

breathing deeply. Some participants doubted its effectiveness, thought it was a joke, felt

awkward and/or weird, and believed they were "too cool for it." As a male participant expressed:

>   At first, I thought it was like a joke. We all sat around in a circle and then we all just
>
>   started laughing. We couldn't do it; it was awkward. We were all laughing, like nobody
>
>   got it. But after class one, we started getting it and we started meditating and relaxing and
>
>   getting into the rhythm. [Now], we just do our thing. Just meditate.

As evidenced in this statement, mindfulness/meditation was a new concept for many

PEAK participants. Due to their unfamiliarity and discomfort with the practice, coupled with

their presenting behavioral concerns, youth were initially hesitant to engage. These sentiments

were echoed by another male participant:

>   [The most difficult part], at first, was just sitting there, and then after that, it was kind of
>
>   easy because you get into this relaxed state, so it's good. [I think sitting was difficult]
>
>   because I'm always moving. I'm active, so sitting in one space for too long. I had a hard
>
>   time doing that.

Improved decision-making processes and choices. Participants attributed their ability to

make better choices to the mindfulness/meditation skills that they learned in PEAK. Participants

used this practice as a way to "stop and think" about an outcome before engaging in an activity

(e.g., substance use). As indicated by a male participant, "…it helps you relieve stress instead of

[going] straight to drugs or something. Like you can try to meditate and try to cope with

whatever, like with your anger or stress, before going to drugs or alcohol." Mindfulness was also

understood as a strategy that allowed youth to pause and walk away from a conflict (e.g.,

physical/verbal fights, negative peer influences). As another male participant described, "I use

mindfulness if there's a fight like instead of going at it and trying to fix it…[I] take a step back

and meditate on it and be smart about it." Both strategies demonstrated the ways in which this skill was used to help participants prevent negative outcomes by providing a mechanism to slow down their reactivity and make healthier and less risky choices. As a male participant stated:

> If I have problems [with controlling myself] at work or at home and stuff. I think twice about hanging out with wrong friends. Trying to choose your friends. Think about it twice. Think about the situations before you act upon it.

Integration of mindfulness into daily life. At the end of PEAK, participants were able to practice mindfulness independently and were motivated to continue applying this practice in their daily lives. Most commonly, participants either planned to practice mindfulness/meditation daily or one to two times per week, as it served as a strategy that youth could employ when faced with daily stressors such as school, family, and interpersonal relationships. As indicated by a male participant:

> If I'm stressed out...then I can take a step back, take a deep breath, and just focus. That's how I can use it in everyday life, for example, if I'm stressing out on school and family, girlfriends, stuff like that, just everyday stuff. [I can] inhale [and] exhale in the class in here right now. You learn how to control your mind and what's going on around you.
>
> In addition to using mindfulness when stressed, another participant also expressed using mindfulness when they were feeling better, as a way to help maintain improved functioning:
>
> I would use this meditation probably either on a day to day basis or weekly. Just to kind of help me deal with stress or even if I didn't have stress, it's better to use something positive than fill my brain with something negative, so this is another good positive way

of just sorting out situations or problems and dealing with them in a better solution than I

maybe would've picked if I just wasn't thinking and just acted.

Conversely, one participant disclosed that he would not be interested in learning more

about mindfulness/meditation or practicing additionally, since he felt as if "what we learned in

the class, it already helped me a lot...so if I needed more knowledge about mindfulness and

meditation I think I would take a class on that." Other participants expressed barriers, such as

time constraints, to integrating mindfulness into their daily lives.

Gratitude letter themes. As mentioned above, themes specific to the gratitude letters

included: (a) gratitude for the group, (b) resilience factors, and (c) enhanced self-esteem.

Gratitude for the group. Participants expressed sincere gratitude for the group and the

opportunity to learn "valuable life lessons." Participants identified specific group activities that

they enjoyed, such as the mindfulness/meditation practice, *Why Try* curriculum, "I Am" poem,

"Lifting the Weight," "Teach Back," Zumba, and yoga. Participants expressed their appreciation

for the group in multiple ways:

I plan to use everything that you taught me in my everyday life--from mindfulness

training to the Zumba. Both have helped to change me so that I am a more positive

person most of the time…and when I'm not positive, to just stop, think, and breathe.

Developmentally-adapting the group, through the use of multimodal teaching methods, helped

youth to remain engaged and learn new strategies throughout the PEAK program. As another

youth wrote, "thank you, again, for everything. I will always appreciate the lessons and teaching

that you've given us. *Mahalo nui loa* (thank you very much) and much love!" Based on the

feedback from the gratitude letters, PEAK appeared to be a fun, informative, and meaningful

group for these participants.

Resilience factors. Participants described resilience as a strength derived individually, from the group, and from the broader community. Individually, participants expressed the determination to "keep going," "not give up," "jump over the hurdles," and "overcome obstacles" in their lives. As one participant articulated:

I also realized that if you make the same errors over and over again, you won't get any better; however, if you learn from your mistakes and try again, you can improve. That lesson helped me to get better at a lot of things, like surfing. When I mess up or get pounded, I just paddle back out and try again.

This surfing metaphor highlights the concept of individual resilience through which one obtains the inner strength to overcome obstacles. Youth also derived strength from the relationships established with other group members and valued learning from one another. As a participant expressed, "…teaching us how to overcome obstacles in our lives is a much easier way than figuring it out on our own." By strengthening peer relationships, PEAK has enhanced participants' collective resilience. As indicated by a youth:

I feel closer to my peers because of your class...I really liked the activities that we did because most of them required teamwork, and I like to work in a team to figure out how we can solve a problem using the right technique.

As evidenced in these quotes, building resilience in youth extends beyond strengthening the individual and also encompasses strengthening relationships within youth's multiple contexts, such as peer groups, schools, family systems, and engagement with community resources. One participant disclosed how her school served as a resource for her:

During the jumping the hurdle lesson, I realized that before I came to [school name], I hadn't really jumped any hurdles. I was pretty much lifting the balloon, but after coming

down here and being in your class and learning about lifelines, I recognized that [school

name] is my lifeline.

Interestingly, participants also expressed a desire to help other youth in their community

learn about mindfulness/meditation through the PEAK program, due to the benefits that they

experienced. This desire and responsibility to help others in their community may stem from the

collectivistic culture in Hawaiʻi, which is derived from Native Hawaiian and Asian values

(Marsella & McCubbin, 2009). As a male youth wrote, "I plan to use all of the knowledge that

you shared with me so that I can pass it on to the next generation." Similar sentiments were

echoed by other youth, such as, "although I will be graduating this year, I hope that next year's

students are able to learn from you."

Enhanced self-esteem. Participants reported increased self-esteem, as defined by

enhanced levels of awareness, confidence, growth, and empowerment. Participants reportedly

developed these strengths through the process of engaging in new experiences, improving

specific skills (e.g., public speaking), "tearing off labels," and redefining themselves. As a

participant described, the PEAK program helped her to "build my character and to overcome

trying things that I would usually be uncomfortable doing." By engaging in their discomfort and

ascertaining new skills such as public speaking, youth gained a sense of confidence and

improved self-esteem. As the same female participant described:

What I would like to thank you for the most is when you made me talk in front of

everyone. At first, I didn't really like presenting but over the course of the class, I started

to not panic when it was my turn. All of those times you made me present, my mind

would go blank so I would panic, but now I just try to breathe.

"Tearing off labels" functioned as an effective way to challenge youth's preconceived notions about themselves and others. By tearing off their own labels, youth were able to redefine themselves, which ultimately aided in enhancing their personal identity (*'ike piko),* cultural identity *(mauli lahui),* and applied achievement *(ike ho'oko),* which addressed some of the aforementioned cultural values that PEAK aimed to enhance. As illustrated by a male participant:

> The most meaningful lesson was tearing our labels off because I could really relate to it as I was always labeled a failure because of my grades and having to go to court (and a bunch of other things). After your class, I know that I can tear off that label by overcoming that hurdle and graduating on-time to prove wrong and to show my doubters that I am successful.

Discussion

This was a program evaluation that utilized a mixed methods design to examine the effectiveness of PEAK, a six-week community-based group intervention that incorporates MBIs to address multiple risk behaviors among multiracial youth in Hilo, Hawai'i. A total of 51 youth, ages 12 to 23 years old, participated in this mixed-methods study that included pre-/posttest analyses of health risk factors such as substance use and depression and health promoting factors such as resilience, self-esteem, and mindfulness. Responses from two subsets of participants, who engaged in a focus group ($n = 11$) and composed gratitude letters ($n = 12$), were analyzed using Braun and Clarke's (2006) thematic analysis approach. All of the youth who participated in PEAK attended all of the sessions and completed pre- and post-test measures, indicating a lack of attrition throughout the six-week intervention.

The results of this study demonstrated strong support for the effectiveness of using MBIs

to treat multiple risk behaviors among this sample of Native Hawaiian, Pacific Islander, Asian American, and multiracial youth. At baseline, 41.17% of youth endorsed "moderate" or "severe" levels of depressive symptomatology, 29.41% endorsed using at least one substance within the past 30 days, 94.12% endorsed "high" or "exceptional" levels of resilience, 31.37% endorsed "high" levels of self-esteem, and 7.84% endorsed high utilization of mindfulness skills. Following their completion of PEAK, youth demonstrated statistically significant improvements on their levels of depression, resilience, self-esteem, and mindfulness scores, but not on substance use behaviors. More specifically, post-intervention, 25.48% of youth endorsed "moderate" or "severe" levels of depressive symptomatology, 33.33% endorsed using at least one substance within the past 30 days, 96.08% endorsed "high" or "exceptional" levels resilience, 50.98% endorsed "high" levels of self-esteem, and 35.29% endorsed high utilization of mindfulness skills.

There were also no moderating effects of gender on any of the variables and no statistically significant differences between males and females on any of the measures at baseline or post-intervention. There were no statistically significant differences between adolescents (12 to 17 years old) and adults (18 to 23 years old) on depression, resilience, or mindfulness at baseline and post-intervention. With regards to self-esteem, there were no statistically significant differences at baseline; however, at post-intervention adolescents ($M = 22.81$, $SD = 4.95$) demonstrated statistically significantly higher self-esteem than adults ($M = 19.16$, $SD = 3.91$), $t(49) = 2.75$, $p = .008$. There were no statistically significant associations between age and substance use. Youth's health risk profiles improved, such that by the end of PEAK, youth endorsed more protective factors than risk factors. Youth also found the MBIs to be acceptable and beneficial to their overall well-being, as it served as a positive coping strategy for stress and

a mechanism to improve decision-making skills.

Health Risk Factors

At baseline, 29.41% of participants, ranging in age from 16 to 23 years old, endorsed use of at least one type of substance within the past 30 days, with twice as many females ($n = 10$) endorsing substance use compared to males ($n = 5$). Prevalence increased to 33.33% at post-intervention, due to three additional males endorsing substance use ($n = 8$) and one female denying substance use altogether ($n = 9$), although the change between pre- and post-intervention was statistically insignificant. Rates of cigarette use (19.61%), marijuana use (13.73%), and being drunk or high on alcohol (9.80%) remained the same throughout this study. Changes in substance use frequencies were due to increases in e-cigarette (9.80% to 11.76%) and alcohol use (13.73% to 17.65%) and decreases in inhalant (3.92% to 0%) and steroid (1.96% to 0%) use at pre- and post-intervention, respectively.

Increased substance use was also found in another study that utilized a 6-week MBIs (MBSR) program to treat sleep disturbances in 55 adolescents, ages 13-19 years old, who recently received substance use treatment (Bootzin & Stevens, 2005). The authors found that substance use increased during the intervention for all participants; however, for those who completed the group, trends decreased at 12-month follow-up, a trend that was not seen in youth who did not complete the group. Bootzin and Stevens (2005) hypothesized that changes in substance use may be delayed and not fully seen until 12-month follow-up. They also discussed how the MBIs did not specifically target substance use behaviors, which may have also contributed to the delayed response.

While limited conclusions can be drawn from the small sample size of PEAK participants, it is possible that youth may also experience a delayed response in substance use

behaviors. In addition, within the PEAK subsample, 55.55% (n = 10) of participants were under

18 years old, and only one participant was over 21 years old. Youth who were underage may

have underreported use at the start of the group due to discomfort disclosing such information or

lack of awareness regarding the problematic nature of their use. At post-intervention, youth may

have become more aware of their substance use practices and trusting of their peers and group

facilitator, prompting more accurate reporting. Overall, age did not play a statistically significant

difference on youth's substance use behaviors.

It is also possible that statistically significant changes were not observed in this study

because the PEAK intervention did not specifically focus on the topic of substance use within its

curriculum, and instead addressed the issue as it came up within the context of values, goals,

overcoming obstacles, mindfulness, an improved decision-making. Based on the research

regarding coaction and MRBCs (Prochaska et al., 2014; Prochaska et al., 2008), it may not be

necessary to include specific programming regarding substance use in order to see changes in

substance use behaviors. If shared risk factors and coping strategies are addressed (e.g., impulse

control, decision-making, adaptive coping strategies, etc.), participants may be able to apply

these strategies in different contexts depending on their developmental age. Within the focus

group, youth indicated how they learned to use mindfulness to "cope with…anger or stress,

before going to drugs or alcohol," suggesting that for some youth, mindfulness may have been

helpful in reducing stress and altering alcohol and drug use.

In a recent meta-analysis examining mindfulness in treating substance use, Li and

colleagues (2017) identified 42 studies, only one of which focused on adolescents (Himelstein et

al., 2015). Himelstein and colleagues (2015) piloted a randomized controlled trial with 35

incarcerated male adolescents (mean age = 16.5 years) in California, who were racially/

ethnically diverse; 5% of whom identified as Pacific Islander. This study compared effects of treatment as usual (TAU; weekly psychotherapy) with TAU and mindfulness meditation (1.5-hour individual sessions) and found that youth in the treatment group demonstrated significant improvements on attitudes towards drugs, self-esteem, decision-making, and behavioral regulation. Although PEAK participants did not demonstrate statistically significant changes in substance use behaviors, participants reported on the impact of mindfulness on their stress, decision-making, and substance use in the focus group, which could provide some insight on the impact of mindfulness on substance use within youth populations.

Substance use often co-occurs with depression (Aseltine, Gore, & Colten, 1998; Marmorstein, Iacono, & Malone, 2010); within youth populations, the two can be viewed as multiple health risks that covary with one another (Arbour-Nicitopoulos et al., 2012; Brooks et al, 2002). Previous research discussed the impact that depression and stress have on adolescents' tobacco use, likelihood to get into physical fights, sedentary practices, and unhealthy diets (Arbour-Nicitopoulos, 2012; Brooks et al, 2002), all of which further emphasizes the need to continue exploring the impact of depression on multiple risk behaviors. Youth in the PEAK intervention, demonstrated statistically significant improvements on their levels of depression. Overall sample means of depression scores fell within the "minimal/mild" range at baseline and post-intervention, which would suggest that depression was not a common problem for PEAK participants. However, after closer exploration, it was evident that the mean scores were not reflective of many of the youth's depression profiles.

In fact, at baseline, 41.17% of youth endorsed "moderate" or "severe" levels of depressive symptoms and 19.61% ($n = 8$) endorsed varying levels of ideation regarding self-harm and suicidality. At post-intervention, 25.48% of youth endorsed "moderate" or "severe"

levels of depressive symptoms and 11.76% (*n* = 6) endorsed passive thoughts of self-harming

behaviors, with one youth indicating past "plans and/or actions that have hurt." Even though a

quarter of youth continued to endorse "moderate" or "severe" depressive symptoms at post-

intervention, there was a statistically significant reduction in the number of youths who reported

depressive symptoms at the end of PEAK. After consultation with the program director, I learned

that participants who endorsed active suicidal ideation ("plans and/or actions that have hurt" per

the KADS-11) reported vague thoughts of death and vague plans of self-harm (e.g., running

away, thoughts of getting into car accidents). They denied specific intent or plan, were able to

verbally contract for safety, continued with group treatment, and were provided with appropriate

mental health referrals at the end of the program. Prior to this study, the PEAK program did not

formally assess for depression or suicidality, even though youth on the Big Island have the

highest prevalence of depression (25.5%) and past suicide attempts (14.6%) when compared to

youth on other islands (Saka et al., 2016). As such, integrating the KADS-11 as part of PEAK's

methods was ultimately beneficial for the youth and for the program.

Youth demonstrated statistically significant improvements in depressive symptoms, self-

esteem, and resilience, echoing findings from other studies examining MBIs on mental health

within clinical (Barnet et al., 2014; Biegel et al., 2009; Himelstein et al., 2012; Tan & Martin,

2012) and non-clinical populations (Tan & Martin, 2016). In a study very similar to PEAK, Tan

and Martin (2012) created, implemented, and piloted a developmentally adapted mindfulness-

based program for nine adolescents, ages 13-17 years old. The program consisted of five weekly

one-hour sessions, based on tenets of MBSR and MBCT, which they formulated into the

mnemonic ROAM (Regulate attention; Observe within and out; Accept; and Meaningful and

mindful action). At post-intervention and 3-month follow-up, participants demonstrated

significant decreases in psychological distress (depression, anxiety, stress) and psychological inflexibility; youth also demonstrated increases in self-esteem and mindfulness. Similar to PEAK, Tan and Martin (2012) also described the importance of shortening mindfulness-based components into brief (10-15 minute), but frequent interventions that were easily applicable and transferable to youth's daily lives. They emphasized techniques such as drawing, music, breathing, mindful eating, body scans, movement, etc. which are strategies that the PEAK facilitator also incorporated into her 15 to 20-minute MBSR-based lessons within each group session.

In the PEAK focus group and gratitude letters, youth often reported on the "valuable life lessons" that they learned in regard to "overcoming obstacles," receiving "bad news," coping with grief and loss, and managing thoughts of running away. They also described the ways in which they integrated mindfulness into their daily life, through the use of body scans, stopping and breathing, and relaxing the mind and body to improve sleep while they were lying in bed at night. Youth described transferring these skills into other contexts, outside of the group, when they were faced with risky or difficult situations (e.g., peer pressure to use substances or become involved in fights) and often spoke about returning to their breath. In addition, youth discussed the importance of engaging in interactive activities, such as writing poems to enhance self-awareness and cultural identity formation, sharing their poems aloud with their peers, and becoming more physically active through the Zumba lessons that the PEAK facilitator incorporated. These interventions combined with more traditional MBSR approaches (e.g., mindful breathing, mindfulness of the body, etc.) contributed to the reduction in youth's depression scores, especially for youth who reported elevated levels of depression at baseline.

There was also a significant portion of youth in the PEAK program who did not endorse

clinically significant levels of depression or substance use at baseline or post-intervention. In

another study by Tan and Martin (2016) that examined the relationships between mindfulness,

self-esteem, resiliency, and mental health symptoms (e.g., depression, anxiety, stress, and

cognitive inflexibility) in non-clinical populations ($N = 93$), the authors found three main

findings with regards to positive correlations with mental health variables. They proposed that in

healthy adolescents, there were no significant gender differences with regards to mindfulness as

measured by the Children's Acceptance and Mindfulness Measure (CAMM; Greco, Baer, &

Smith, 2011); there were also no significant mean differences for gender, age, or mindfulness.

Secondly, there were significant positive correlations between mindfulness and self-esteem and

mindfulness and resilience. Lastly, they found that mindfulness was negatively correlated with

negative mental health symptoms such as depression, anxiety, stress, and cognitive inflexibility.

Tan and Martin (2016) discussed the novelty of their findings, since majority of the

current research on mindfulness and youth are outcome studies with clinical populations.

Interestingly, within the PEAK program, participants displayed similar characteristics to the

"healthy" adolescents in Tan and Martin's (2016) study, despite the "at-risk" and/or "medically-

underserved" labels that are often ascribed to them. In the PEAK study, there were no

statistically significant gender differences on any of the variables, nor did gender serve as a

moderating variable. With regards to self-esteem, adolescents demonstrated statistically

significantly higher self-esteem than adults at post-intervention, but not at baseline. There were

also similar inverse intercorrelations between depression and positive mental health variables

such as self-esteem, resilience, and mindfulness, providing further support for previous findings

that mindfulness is inversely related to negative mental health outcomes (Brown & Ryan, 2003;

Tan & Martin, 2016). In addition, Tan and Martin (2016) provided a conceptualization for the varied health risk profiles that youth in PEAK endorsed, suggesting that despite their "at-risk" classification, youth display many of the positive mental health variables of "healthy" adolescents, due to their high levels of self-esteem and resilience. Self-esteem and resilience are therefore, protective factors.

Health Promoting Factors

In PEAK, self-esteem was moderately associated with resilience at baseline ($r = .39$) and at post-intervention ($r = .42$), suggesting that as self-esteem scores increased resilience scores also increased. At baseline, youth demonstrated remarkably healthy levels of self-esteem and resilience, with 31.37% endorsing "high" levels of self-esteem and 94.12% endorsing "high" levels of resilience. At post-intervention, a statistically significantly higher portion of youth endorsed "high" self-esteem and resilience (50.98% and 96.08% respectively). As aforementioned, these changes may be due to the interactive MBIs that youth learned about, practiced, and were able to easily transfer into their daily lives outside of PEAK. Youth also formed stronger relationships with their peers, elders (PEAK facilitator), and other community supports (e.g., schools, churches, and community centers where groups take place; community support agencies such as FPH) over the course of the intervention.

In addition, these results align with previous findings that Asian American, Native Hawaiian, Pacific Islander, and multiethnic youth in Hawaii demonstrate higher rates of self-esteem when compared to youth of the same race on the mainland (Xu et al., 2015), which may be due to the protective benefits of growing up in an environment in which Asian and Native Hawaiian cultural norms are valued, accepted, and proliferated (Omizo et al., 2008). Using a strengths-based approach, Johnson and Beamer (2013) discussed the ways in which health

disparities can be translated from messages of deficit to messages that encourage positive

behavioral action. They propose that instead of focusing on deficits, public and mental health

researchers should examine populations through the lens of resilience, which will shift the

narrative from distressed and damaged to challenged and resilient. Furthermore, understanding

indigenous groups from this perspective acknowledges that they are people who are "manifesting

a historical memory [and are] challenged by a postcolonial society that contradicts their

worldview" (Johnson & Beamer, 2013, p. 1370). Youth in this study experienced depression

and/or substance use and they also experienced healthy levels of self-esteem and resilience that

manifest from the familial, cultural, and contextual relationships in their lives.

As a female youth explained in her gratitude letter:

I realized that before I came to [school name], I hadn't really jumped any hurdles. I was

pretty much lifting the balloon, but after coming down here and being in your class and

learning about lifelines, I recognized that [school name] is my lifeline.

As evidenced in this quote, fostering resilience in youth is not solely about improving an

individual's ability to overcome adversity on their own (Cameron et al., 2007; Johnson &

Beamer, 2013; Ungar, 2013). Instead, it is about supporting youth in developing new experiences

and relationships with their families, friends, schools, communities, and cultures so that the

relationships persist long after the intervention ends. In accordance, effective interventions then,

are not only determined by statistical significance, but also by ensuring that youth are aware of

their cultural supports in various contexts, so that when the next problem arises, they "know

where to go in the community to get help," or "have people [they] look up to" (items from the

CYRM-12; Ungar & Liebenberg, 2011).

Youth's Experiences with Mindfulness

The PEAK program administrators were interested in assessing youth's engagement with mindfulness/meditation since it was recently incorporated into the PEAK curriculum prior to this study. As hypothesized, youth reported a positive experience learning about and engaging with mindfulness and reported applying it is a positive coping strategy when faced with stressful and difficult situations (Barnet et al., 2014; Himelstein et al.; 2012; Tan & Martin, 2016). Mindfulness practices engage youth in learning the skills to simultaneously activate the elements of attitude, attention, and inattention so they can develop detached, non-judgmental, and objective perspectives of their experiences, which allows them to clearly observe, recognize, disengage, and reflectively respond to habitual patterns or thoughts (Shapiro et al., 2006). For youth living in highly stressed environments, or who are still experiencing the manifestations of historical trauma (as discussed by Johnson & Beamer, 2013 above), developing these skills can serve as a protective factor to mitigate the disproportionate amounts of stress and adversity they experience on a daily basis (Perry-Parish et al., 2016; Rawlett & Scrandis, 2016). Mindfulness then becomes a self-regulatory process that promotes resilience within youth, as they are able to apply this positive coping strategy across contexts and in various situations.

Over the course of PEAK, youth's application of "almost always" using mindfulness practice increased from 7.84% at baseline to 35.29% at post-intervention as measured by the AMPS. Using the AMPS, as opposed to other measures of mindfulness, assisted youth in being able to identify the situations in which they can apply mindfulness (e.g., "relax my body when I am tense," "stop reacting to my negative impulses," "let go of unpleasant thoughts and feelings"), rather than quantifying the amount of mindfulness one possesses, which is common in other mindfulness measures (e.g., Children's Acceptance and Mindfulness Measure; Greco et al.,

2011). These results were also confirmed by youth's responses in the focus group and gratitude letters. In order to provide additional context regarding the need for mindfulness, youth described the types of psychosocial stressors that they often experienced. This included stressors such as school difficulties, financial hardships, relational issues with family and friends, receiving bad news, coping with grief and loss, and having thoughts of running away. These stressors impacted youth's mood and psychosocial functioning, as youth described feeling restless, fatigued, unable to sleep at night, worried, depressed, angry/irritable, and feeling peer pressured.

Youth identified the perceived changes that they experienced in regard to cognitive, behavioral, emotional, physiological, and interpersonal functioning, which included improved sleep, organizational skills, decision-making processes, self-awareness, ability to let go of negativity, reduced stress, and interconnectivity with their peers and community. Multiple youth described the ways in which mindfulness helped them to "take a step back and meditate on it and be smart about it," as opposed to acting impulsively. Additionally, when youth experienced grief, loss, or additional psychosocial stressors they used mindfulness as a way to "try to cope with it…cope with not having a melt down and try to just be calm and relax instead of getting all angry and doing something [they] might regret in the future." Mindfulness, therefore, appears to be an acceptable and beneficial skill that youth can apply when experiencing stressful and challenging situations.

Interestingly, 91.3% of the participants who participated in the focus groups and who wrote gratitude letters were males, ages 16-19 years old, and of Native Hawaiian, Pacific Islander, White, Asian, and/or multiracial decent. This occurred because youth who participated in the focus group were recruited from an all-male PEAK group. With regards to the letters,

many of the youth who participated in that group were males as well. Le and Proulx (2015)

conducted a culturally adapted MBI (mindfulness and the *aloha* response in Le & Shim, 2014)

with Native Hawaiian/Pacific Islander male adolescents who were incarcerated in a juvenile

justice center on Oahu. Similar to the findings of this study, participants demonstrated

statistically significant improvement on measures of stress, self-regulation, and impulsivity due

to the culturally adapted MBIs that they were taught and experienced (Le & Proulx, 2015).

As the field of MBIs continues to grow, there has been a call to explore the impact of

gender differences on responses to MBIs (Bluth, Roberson, & Girdler, 2017). Although there

were no statistically significant gender differences between males and females with regards to

mindfulness in this study, the qualitative results may provide further insight into this need.

Furthermore, this study also enhances the current qualitative literature regarding mindfulness

with adolescents from vulnerable communities. Results from a recent meta-analysis (Rawlett &

Scrandis, 2016) examining mindfulness treatments with adolescents at-risk, identified only two

studies that utilized a mixed-methods (Barnet et al., 2014) or qualitative (Himelstein, Hastings,

Shapiro, & Heery, 2012) methodology to ascertain youth's experiences with this treatment

approach.

Cultural Nuances

Prior to my involvement with PEAK, the program had already been in existence since

2010, and the Program Supervisor and Program Manager (facilitator), whom I collaborated with

on this project, were also involved with PEAK since its inception. The Program Supervisor, who

is now FPH's President and CEO, is a licensed clinical social worker, and has worked with FPH

since it was Casey Family Programs more than a decade ago. The Program Manager has

extensive experience working with youth in this community and is also a certified Zumba

instructor. As such, these two individuals, along with their one administrative assistant, have

worked tirelessly (across islands) to develop this program into the successful program that is

today. After having worked at FPH myself from 2011 to 2013, I was aware of the PEAK

program, but was unaware of its mission, goals, or impact on the community.

When I approached FPH in 2015 to inquire about any research needs, one of the main

concerns they expressed (which is also common among agencies in Hawai'i) was the difficulty

in finding programs that were evidenced-based, effective, and culturally congruent with the

uniquely diverse youth of Hawai'i. Furthermore, they also discussed the challenge of (and value

in) receiving their funding from the State of Hawai'i OYS. PEAK has held this contract to

reduce risk factors (e.g., substance use, teenage pregnancy, sexually transmitted infections,

truancy, delinquency, anger/violence, alienation) and strengthen protective factors (e.g., self-

esteem, resilience, social emotional learning skills, cultural awareness, interconnectivity with

family, friends, and the community), for youth in Hilo for several years. As a result, they

expressed the challenge of implementing and evaluating a brief community-based group

intervention that addressed all of these multiple risk behaviors.

Due to these complexities, PEAK was already in the process of implementing a program

that they culturally and developmentally adapted themselves. Recently, the Program Manager

had studied mindfulness with one of the leading mindfulness researchers at the University of

Hawai'i (Thao Le, Ph.D.) and started implementing MBIs into PEAK's curriculum. The novelty

of using MBIs to treat multiple risk behaviors in Hawai'i was significant, especially given the

scarcity of programs incorporating MBIs into treatment (see literature review above), coupled

with the research demonstrating its effectiveness in treating the underlying processes associated

with maladaptive coping strategies and negative affective experiences that are learned as a result

of chronic stress present in youth's familial, social, medical, and community settings (Perry-Parrish et al., 2016).

As a result, and as was evidenced in the qualitative portion of this study, the PEAK program manager played an integral role in the participants' positive response to the intervention. The youth identified with the program manager because she was local to the community, personable, humorous, engaging, knowledgeable, hardworking, challenging, and willing to disclose her personal story which resonated with many of the participants. Youth referred to the manager as "Aunty [First Name]," which is a respectful and culturally congruent way of addressing anyone who is an elder (or generation above) in the community. This distinction was very clear from the focus group facilitator (FPH postdoctoral fellow), to whom the participants referred to as "ma'am." Although this term is respectful, it demonstrates a formality that was not present with the PEAK program manager. Therefore, it should be noted that the program manager's relationship with the youth and the community likely played a significant role in the effectiveness of this study. Although further replication of this study may be limited given this finding, it demonstrates the ways in which having a group facilitator who is culturally representative of the community can positively impact the effectiveness of the group intervention. When designing and staffing future programs, agencies should carefully consider the cultural match between the group facilitator and the communities (and youth) being served, as a key component to effective treatment.

Furthermore, the decision to implement a mixed-methods study developed due to the desire from PEAK to learn more about youth's experience with mindfulness. When conducting research within Native Hawaiian and other indigenous communities, researchers (Haring, Titus, Stevens, & Estrada, 2012; Johnson & Beamer; 2013) have advised the use of storytelling as a

qualitative research approach to supplement quantitative research practices. Johnson and Beamer (2013) also emphasized the importance of including indigenous voices in research, whether it is through verbal storytelling, poems, letters, war chants, prayers, songs, and/or dance. Conducting a mixed-methods study, thus allows for the inclusion of storytelling, which ultimately enhances the results and provides a context for the findings.

Lessons learned. Despite being born and raised in Hawai'i and also having ties to FPH, there were several cultural and geographical barriers that impacted the development and outcome of this study. I have lived on the mainland for nine years, which has undoubtedly impacted my understanding of the specific cultural nuances and needs of community-based programs in Hawai'i. Even though I still consider myself a *kama'aina* (local), I believe that there was an enactment of the "in vs. outgroup" conflict that often arises in many collaborations between local programs and mainland institutions (Collier et al., 2018). This led to some misunderstandings (which has since been resolved) early on in regards to program vs. study aims, funding, etc. that I believe may have impacted the ability to address additional methodological needs in this study such as: (a) participant recruitment, (b) administration and collection of measures, (c) coordination of third-party reports from teachers and parents/caregivers, (d) coordination and facilitation of multiple focus groups, and (e) challenges with discussing needs in-person and/or in a timely manner. As the person who is in the role of the outsider coming in, I take ownership of these study limitations and recommend that future collaborators take the necessary time to learn (or in my case, re-learn) the specific cultural needs of the community and organization that one is ultimately serving to ensure mutual understanding throughout the entire research partnership.

Additional Limitations

The following will supplement the limitations stated above. Due to the small sample size and self-report measures, results should be interpreted with caution. There was no control group or waitlist condition to serve as a comparison group for the study, and as such, it is inconclusive as to whether or not improvements were specific to the intervention. The Program Manager served as the only facilitator for all of the groups, which limits generalizability and does not provide information on whether or not this intervention is replicable with other facilitators and/or populations. Due to the vast age range (12 to 23 years old) of participants in this study, results are also not generalizable to specific developmental periods, nor were the interventions tailored to the youth's developmental needs of early (11 to 14 years old), middle (15 to 17 years old), and late (18 to 21 years old) adolescence (American Academy of Pediatrics, 2012). Additionally, in part due to statewide budgetary concerns and schedule conflicts, we were unable to adhere to the original proposal of holding a focus group one-week after the completion of each PEAK group. This significantly reduced the sample of youth who were expected to participate in the focus groups, thus limiting generalizability. In addition, youth who wrote gratitude letters did so voluntarily, suggesting that they likely already had positive associations with the group. As such, I was unable to capture responses from participants who may have held alternative views. Due to the PEAK program's emphasis on and need to use brief measures, I was unable to add additional screeners or questionnaires to obtain a more comprehensive sociodemographic and clinical profile of the participants. In addition, additional analyses regarding changes in academic achievement (e.g., GPA) were not conducted due to the way in which GPA data were collected, and due to the lack of post-intervention data.

Future Directions

This program evaluation is one of the first to examine the effectiveness of a community-based group intervention that incorporates MBIs to treat MRBCs in a multiracial sample of adolescents in Hawai'i. There was only one other study that included MBIs to address MRBCs in Pacific Islander youth (Collier et al., 2018), and implications regarding MBIs were not discussed. Future research should include a follow-up to examine the long-term effects in psychosocial functioning for youth in various environments and include measures of changes in academic achievement (GPA), interpersonal relationships with peers and family members, and connectedness with community resources. Future research should also examine the feasibility and impact of using collateral sources, engaging *'ohana* (family) in treatment, and piloting the intervention statewide. Although 52% of the Native Hawaiian and Other Pacific Islander population resides in Hawai'i, piloting this study in other states where substantial populations reside (e.g., California and Washington; Hixson, Hepler, & Kim, 2012) would provide an informative comparison of cultural and clinical profiles (especially related to self-esteem and resilience). This would provide additional context on PEAK's treatment effects. Other areas of research could include examining the impact of historical context (e.g., historical trauma) on depression and substance use profiles and examining the effectiveness of PEAK in treating other risk and protective factors outlined in their State contract (e.g., truancy, risky sexual behaviors). To reduce the prevalence of self-report response bias, biological measures of change (e.g., cortisol measures) could be used to measure stress at baseline and post-intervention. Lastly, future studies should continue to address variables of self-esteem, resilience, and overall health among Native Hawaiian, Pacific Islander, and other multiracial communities.

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Table 1

Participant Demographics

Participants	*n*
Gender	
Male	26
Female	25
Race	
Bi/multiracial (includes Native Hawaiian)	22
Asian	8
Bi/multiracial (does not include Native Hawaiian)	5
Other Polynesian/Pacific Islander	5
White	5
Native Hawaiian alone	3
Latinx	2
Other	1
Grade in school	
Middle school (7th – 8th)	3
High school (9th – 10th)	8
High school (11th – 12th)	30
Community/undergraduate college	9
Not reported	1

Table 1 (continued)

G.P.A.	
Below 1.0	4
1.0 – 1.9	8
2.0 – 2.9	19
3.0 – 4.0	13
Not reported	7
Parental education level	
High school	18
College	17
Graduate school	3
Some high school	2
Not sure	11
Family income level	
Below $25,000	4
$25,000 - $54,999	9
Not sure	38

Table 2

Qualitative Study Participant Demographics

Participants	Focus Group	Gratitude Letters
n	11	12
Gender		
Male	11	10
Female	0	2
Grade in School		
High School (10th – 12th)	11	12
Race/ethnicity		
Native Hawaiian alone	3	0
Other Pacific Islander	2	1
White	3	0
Asian alone	0	2
Bi/multiracial	2	9
Other	2	0

Table 3

Summary of Intercorrelations Among All Variables at Baseline and Post-intervention

Variable		1	2	3	4	5
1. Substance Use	Pearson Correlation	–	.15	.02	-.08	.08
	Sig. (2-tailed)	–	.31	.88	.56	.60
2. Depression	Pearson Correlation	.14	–	-.56**	-.39**	-.13
	Sig. (2-tailed)	.32	–	.00	.01	.39
3. Self-esteem	Pearson Correlation	-.22	-.49**	–	.42**	.29*
	Sig. (2-tailed)	.12	.00	–	.00	.04
4. Resilience	Pearson Correlation	-.19	-.47	.39**	–	.45**
	Sig. (2-tailed)	.17	.00	.00	–	.00
5. Mindfulness	Pearson Correlation	.13	-.28*	.15	.48**	–
	Sig. (2-tailed)	.38	.04	.28	.00	–

*$p < .05$ level (2-tailed); **$p < .01$ (2-tailed)

Note. Post-intervention intercorrelations (n = 51) presented above the diagonal and baseline intercorrelations (n = 51) presented below the diagonal.

Table 4

Means, Standard Deviations, and Paired t-test Results

Measure	*n*	Baseline M *(SD)*	Post-intervention M *(SD)*	Paired t test *(df)*	95% CI	Cohen's *d*
SSATOD-B	51	.65 (1.16)	.63 (1.02)	t(50) = .17	[-0.22, .26]	.02
KADS-11	51	9.35 (6.77)	4.96 (5.83)	t(50) = 7.78**	[3.26, 5.53]	.68
RSES	51	19.27 (4.37)	21.45 (4.88)	t(50) = -3.81**	[-1.03, -3.81]	.47
CYRM-12	51	48.25 (7.58)	51.88 (6.45)	t(50) = -5.23**	[-5.02, -2.23]	.51
AMPS	51	29.65 (12.31)	39.53 (12.91)	t(50) = -7.05**	[-12.7, -7.07]	.78

*$p < .05$ level (2-tailed); **$p < .01$ (2-tailed)

Note. df = degrees of freedom; CI = confidence interval; SSATOD-B = Student Survey on Alcohol, Tobacco, and Other Drugs-Behaviors; KADS-11 = Kutcher Adolescent Depression Scale-11; RSES = Rosenberg Self Esteem Scale; CYRM-12 = Children Youth Resilience Measure-12; AMPS = Applied Mindfulness Process Scale.

Table 5

Experiences with Mindfulness

Themes	Definition/Example
Shared Themes	
Mindfulness Strategies	Specific techniques used to practice mindfulness (e.g., deep breathing, focusing on the present moment, body scans). Mindfulness was practiced in youth's homes and varied from 30 minutes one time only, to five minutes every day, to 10 to 15 minutes per day.
Mindfulness as a Positive Coping Strategy	Positive coping strategy to employ when experiencing distress, negative emotions, and/or risky situations.
Benefits of Mindfulness Practice	Impacts cognitive, behavioral, emotional, physiological, and interpersonal functioning
Facilitator Factors	Youth valued the group facilitator's shared cultural identities and attunement to their cultural and developmental needs
Focus Group Themes	
Initial Challenges	Youth experienced difficulty engaging in mindfulness due to their unfamiliarity with the practice and baseline psychosocial stressors that impact functioning.

Table 5 (continued)

Improved Decision-making Processes and Choices	Youth used mindfulness as a way to "stop and think" about an outcome before engaging in a risky activity (e.g., substance use; getting into fights).
Integration of Mindfulness into Daily Life	Youth were able to practice mindfulness independently and apply these skills to various aspects of their daily lives.
Gratitude Letter Themes	
Gratitude for the Group	Sincere expression of gratitude for the group and the opportunity to learn "valuable life lessons." Youth enjoyed specific group activities such as mindfulness, *Why Try* curriculum, "I Am" poem, "Lifting the Weight," "Teach Back," Zumba, and yoga.
Resilience Factors	Strength derived from the individual, group, and broader community; shared responsibility to help future generations learn this practice.
Enhanced Self-esteem	Enhanced levels of awareness, confidence, growth, and empowerment.

Figure 1. Process-Person-Context-Time (PPCT) Model

Process	**Person**
Person ⇄ People, objects, and symbols	Demand Characteristics: skin color, age, gender, attractiveness, hyperactivity, passivity, temperament
Enduring and reciprocal forms of interaction in the immediate environment between persons, objects, and symbols	Resource Characteristics: ability, knowledge, skill, and experience vs. genetic defects, developmental delay, severe/persistent illness
Form, power, content, and direction vary systematically and are based on the joint development of the person and environment	Force Characteristics: curiosity, initiates engagement in activity alone or with others, delay of gratification vs. impulsiveness, explosiveness, distractibility, aggression
Context	**Time (Chronosystem)**
Macrosystem / Exosystem / Mesosystem / Microsystem	Micro: Continuity or discontinuity of episodes
	Meso: Frequency of episodes
	Macro: Changing expectations and events in larger society, within and across generations

Figure 1. Bronfenbrenner's Bioecological Model of Human Development. Adapted from Bronfenbrenner, U. (2001). The bioecological theory of human development. In N. J. Smelser & P. B. Baltes (Eds.), *International encyclopedia of the social and behavioural sciences* (pp. 6963–6970). Oxford, UK: Elsevier.

Figure 2. Context Component of Bioecological Model of Human Development (PPCT)
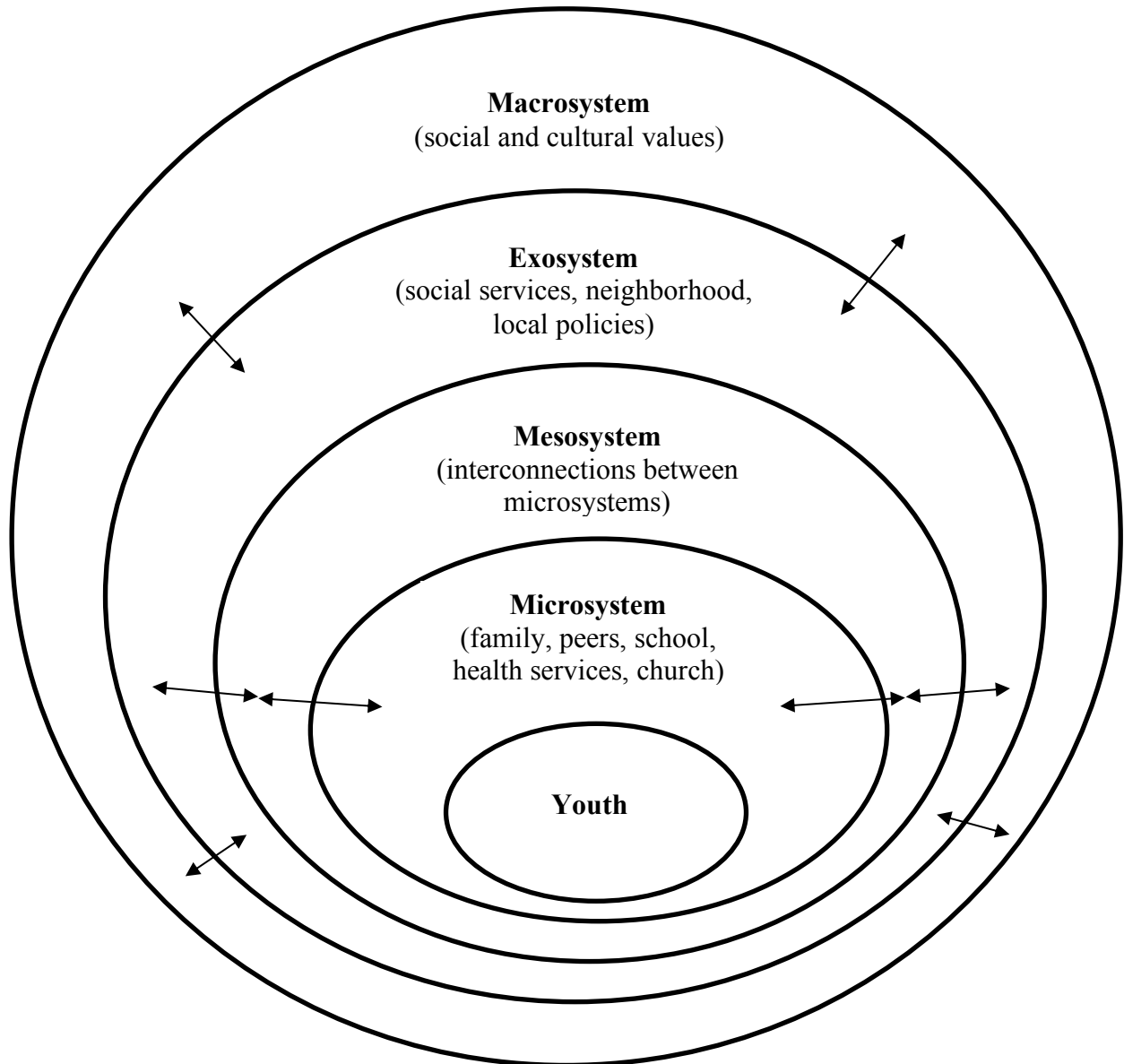
Figure 2. Adapted from Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Cambridge, MA: Harvard University Press.

Figure 3. Native Hawaiian Conceptualization of Psyche

Mana = Life Energy   *Lokahi* = Harmony
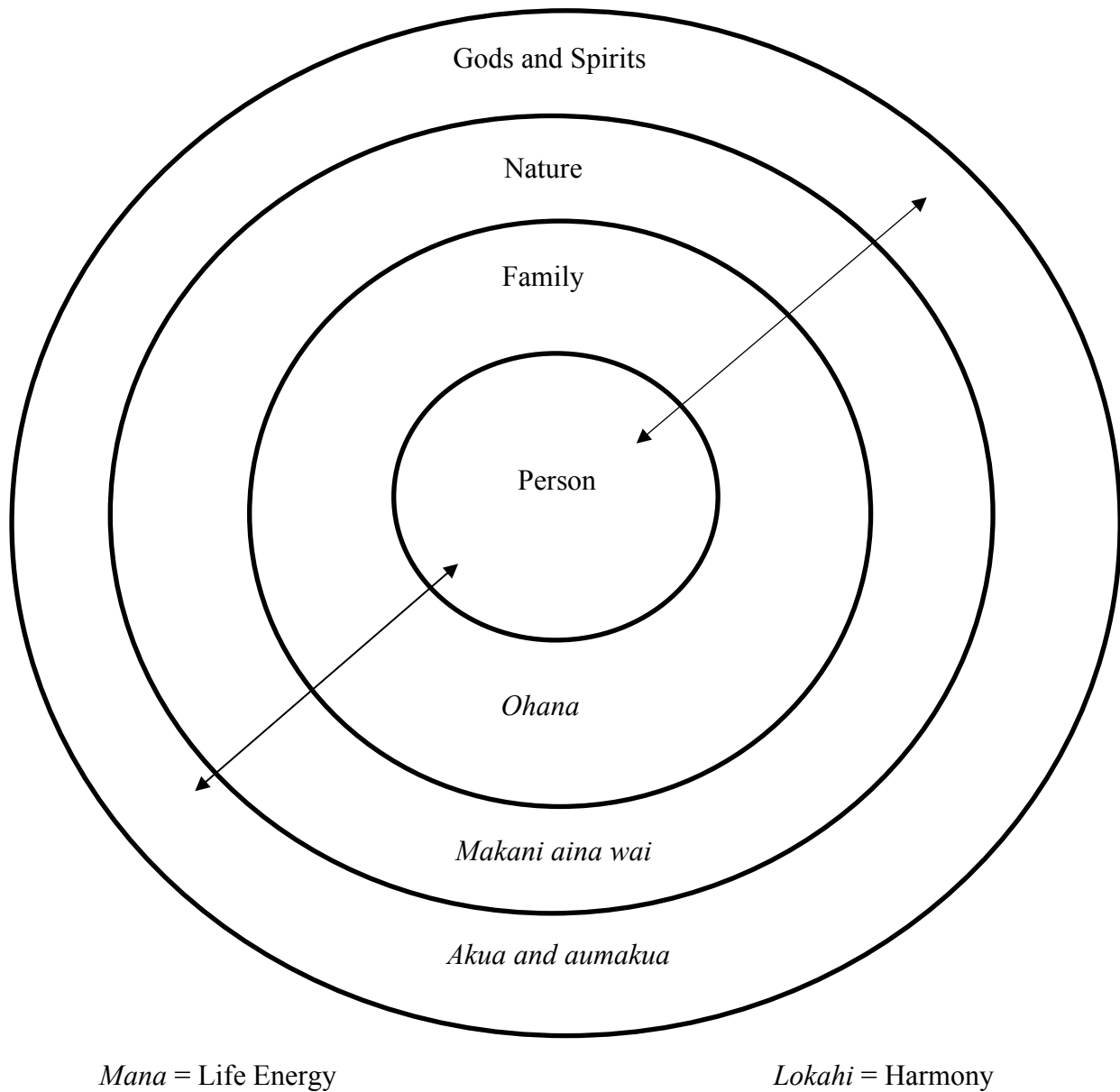
Figure 3. Adapted from McCubbin, L. D., & Marsella, A. (2009). Native Hawaiian psychology: The cultural, historical, and situational context of indigenous ways of knowing. *Cultural Diversity and Ethnic Minority Psychology, 15*(4), 374–387.

Figure 4. Family Programs Hawai'i Organization Chart

Family Programs Hawai'i
Oahu and Hilo

Prevention

Family Strengthening Center	Hoomalu o na Kamali'i	Wendy's Wonderful Kids
Strengthening families to keep them together	Temporary shelter for children who have been removed from their homes	Adoption: Provides social work services to find the best adoptive home for a child

Support

Enhancements	It Takes an 'Ohana	**Peer Engagement and Knowledge (Hilo)**
Funds activities such as tutoring, self-esteem programs, and special events for children at-risk and in foster care	Advocacy with law makers to improve the quality of foster care by empowering resource families	Teaches youth who are at risk to make healthier choices in their lives

Project Visitation	Resource Families Support Services	YES Hawai'i
Strengthens relationships for siblings living in separate foster homes	Offers variety of support services for foster families statewide	Provides peer support, healthy socialization and outreach services for youth

Transition

Nau e Koho	Continuing Education and Job Training
Providing guidance for youth entering college who are at-risk or Hawaiian	Aims to increase the number of youth in foster care to continue education

Figure 4. Family Programs Hawai'i provides prevention, support, and transition services to children statewide, especially those who are in or at risk to become involved in foster care. PEAK is the only program located in and providing services to youth Hilo.

Figure 5. Comparison of Health Risk Factors at Baseline and Post-intervention
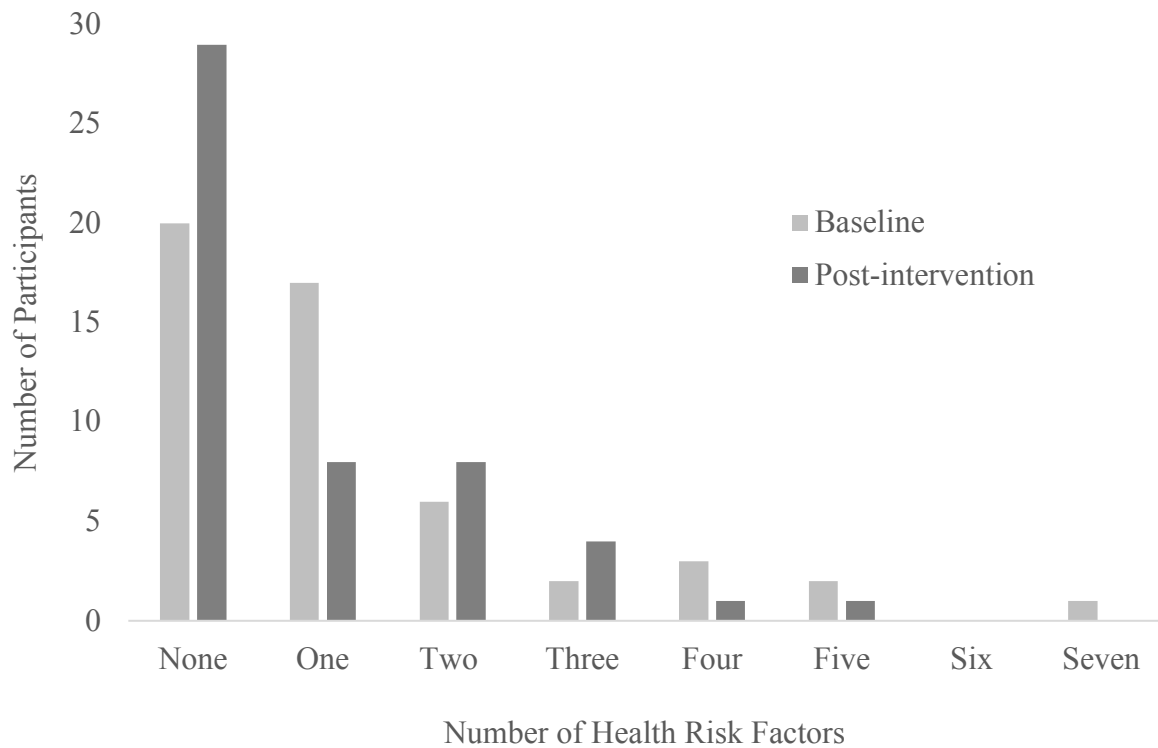
Figure 5. Comparison between the number of health risk factors endorsed at pre- and posttest. Health risk factors consisted of use of cigarettes, e-cigarettes, marijuana, alcohol, inhalants, and steroids, along with moderate to severe levels of depression, self-injurious behaviors, and suicidal ideation (SI). SI and self-injurious behaviors were separated from depression since youth indicated SI and self-injurious behaviors independent of their depression score.

Figure 6. Comparison of Health Promoting Factors at Baseline and Post-intervention
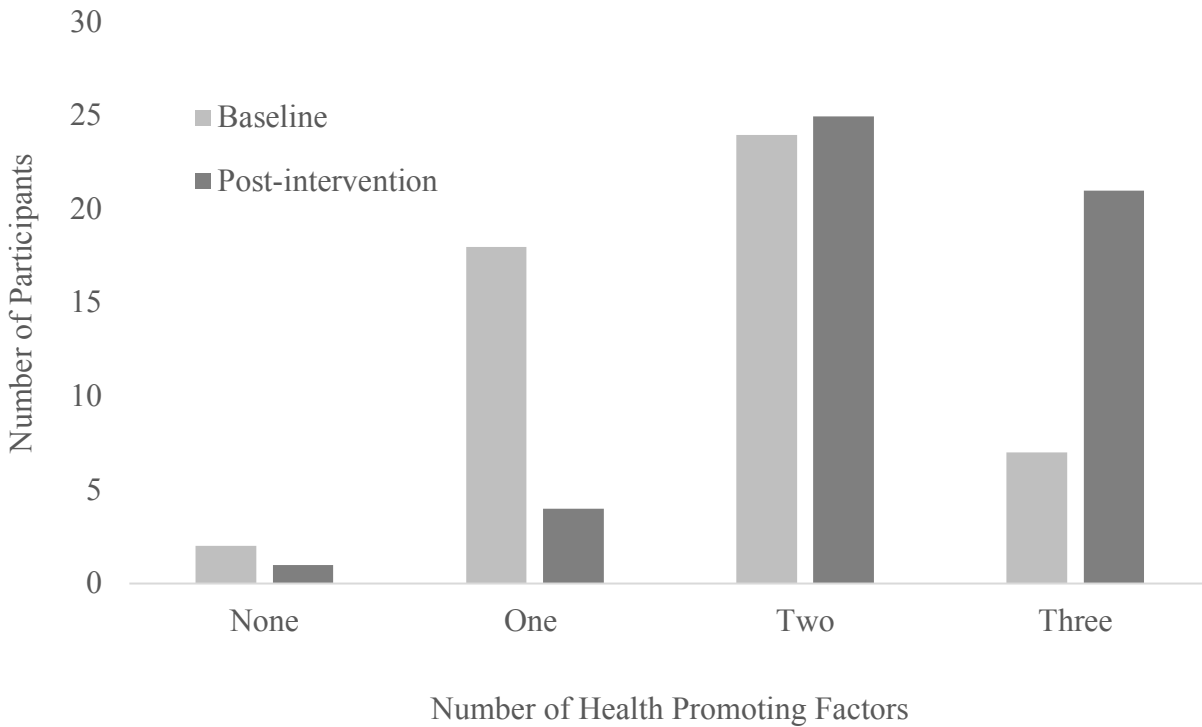
Figure 6. Comparison between number of health promoting factors endorsed at pre- and posttest. Health promoting factors consisted of resilience ("high" or "exceptional" range), self-esteem ("high"), and/or mindfulness ("often" or "almost always").

Appendix A

PEAK Curriculum: Why Try and MBI Components

Why Try
- Game Plan Journal:
  - Provides framework for me to report and share with the group each week
  - Personal record of my life, my experiences, my perspectives, and my "expertise"
  - Helps me record how I am applying core elements of the curriculum into my life
- Music Activity: Name that Tune
- Values Activity: Personal, familial, communal, cultural

- 10 visual metaphors and 10 positive affirmations
  - The motivation formula: I will transform my challenges into my personal strength!
  - Life the weight: I will become stronger by following laws, rules, and expectations!
  - Tearing off labels: I will prove "the real me" and overcome my negative labels!
  - Jumping the hurdles: I will jump over my hurdles and win the race with positive solutions!
  - There are no shortcuts to true success: I will endure life's difficult and confusing hardships until I succeed!
  - Defense mechanisms: I will create a strong positive defense by focusing on what I control - my thoughts, feelings, and choices!
  - Climbing out of the pot: I will identify and hold onto positive family members and friends!
  - Get plugged in: I will generate light for myself and others by staying plugged into positive connections!
  - The "reality" ride: I will obtain opportunity, freedom, and personal strength on the harder track!
  - Seeing over the wall: If I can't see over the wall, I will ask myself, "what step am I tripping on?" I will then study and reapply this step in my life.

Mindful Breathing and Mindfulness of Body

Lesson 1: Mindful Breathing
     Objectives:
- Develop an understanding of mindfulness
- Establish a personal technique for mindful breathing
- Identify how to use mindfulness breathing in personal, everyday lives

     Practices/Activities:
- Inviting the bell
- Guiding instructions: "Inviting you to get into a comfortable, relaxed but alert position. Checking your posture to see if your back is strong and straight, and allowing your front to be open and receptive. Inviting you to close your eyes if

you can feel comfortable; if not, just place a gentle gaze directly in front of you. Gathering your attention and focus and place it on your breath. Noticing as you breathe in, where you feel the breath the most (nostril, chest, belly), and as you breathe out, noticing where you feel the sensation of the breath the most. Seeing if you can breathe out, noticing where you feel the sensation of the breath the most. Seeing if you can be with the breath as you breathe in and breathe out. Complete awareness on the breath. If your mind gets distracted, that's perfectly ok, that's what the mind does sometimes. Simply gently bring your mind, your attention, and focus back on the breath. Repeating this over and over again. Breathing in, awareness of breathing, breathing out, awareness of breathing out."

- Counting technique:
  - Breathing in, count 1, breathing out, count 2, breathing in, count 3, breathing out, count 4…up to 10, then go back down to 1.
  - If mind wanders, go back to 1.

Lesson 2: Creating a Mind Jar

Objectives:

- Develop a practice tool to illustrate the meaning of mindful awareness, attention and focus
- Demonstrate a concrete visual of the nature of thoughts and emotions
- Identify how coming into a "cool" mind can be beneficial

Practice/Activities:

- Making a mind jar
  - Fill jar ¾ full with warm tap water
  - Add glycerin, almost to the top, leaving 1 cm at least of space
  - Put in 4 drops of liquid soap, place lid on tightly, and shake jar until glycerin and soap dissolve in the warm water
- Guiding Instructions: "The water in the jar is your mind's natural state, a mind that you had when you were born. Begin to put in a pinch of glitter for each thought/emotion that you experience. Use one color for angry thoughts/emotions, one color for fearful thoughts/emotions, another color for other kinds of thoughts, etc. When you're ready, put the lid on tightly and turn the jar upside-down, then right-side 5 times, mixing up the glitter. The glitter that's spinning and rushing around is your busy, hot, or upset mind. Now set the jar down. Breathe in and out slowly (Teacher: gently ring your chime). Notice how the glitter settles slowly down to the bottom; as the glitter settles, allow your thoughts/emotions to settle too." (Teacher: when everyone's glitter seems to settle to the bottom and you have paused for about 1-2 minutes, ring the bell again, noting the end of the meditation.

Lesson 3: Mindfulness of the Body

Objectives:

- Gain a better understanding of and connection with our own bodies
- Understand the intimate connection between our thoughts, emotions, and body
- Understand and practice mindful movements
- Understand and practice the body scan

Practices/Activities:

- Mindful Stretches: Have students stand in a circle facing inwards. Lead them through mindful stretches. The idea behind mindful stretches is to pay attention to the bodily sensations of each motion. Remind the students to breathe and to notice their level of comfort (use only 80% effort to avoid strain/hurting themselves).
  - Side stretch
  - Hip circles
  - Ocean waves
  - Swings
- Mindful Walking: "We're going to do a practice called mindful walking. This is where each of us is going to walk in a way where we put our full attention and focus on this action we call walking. Observe and notice your legs, your knees, your feet…the feelings in your legs, knees, feet as you raise and place them down, as you walk. You may want to match your breath with the pattern of your walking. As you breathe in, raise your feet, as you breathe out, you place your feet down. We will do this for a few minutes."
- Body Scan:
  - Ring the bell. "Begin by focusing all of your attention to the top of the head…notice any feelings of heat or tingling…just become aware of anything that is there [LONGER PAUSE]. Breathing in, you are aware of the top of the head…breathing out, you relax your head. Next, move your awareness to your forehead…noticing any sensations like tightness… looseness…anything you feel is okay, even if you can't feel anything at all…just keep your awareness of that area of the body for the next few moments [LONGER PAUSE]. Breathing in, you are aware of your forehead…breathing out, you relax your forehead…eyes…nose… ears…cheeks…face…jaw…shoulders…back…arms…hands…fingers... chest…lungs…heart…stomach…intestines…hips…thighs…upper legs… lower legs…ankles…feet…toes (releasing all the tension and stress through your toes).

Lesson 4: Mindfulness of Senses and Mindful Eating

Objectives:
- Gain a better understanding of and connection with each of the 5 senses
- Learn and practice mindful eating

Practice/Activities:
- Mindful Seeing: Student notice/focus on all the green in nature (or classroom) for 20 seconds
  - Students close eyes and call out all of the green things they saw in the space/room
  - Students open eyes and reflect on the other green things they missed the first time
  - Expand discussion on going through life "blind" vs. mindful awareness/seeing
- Mindful Listening, Touching, Smelling: What's in the Box?

- o Place a variety of small objects in a small box (e.g., pennies, marbles, etc.). Without showing students, have them identify what is in the box by their sound as you move the box. Reveal items when finished.
  - o Repeat exercise with various textures or smells
- Mindful Eating
  - o Use a food that is organic (preferred), small, and easy to handle, guide the youth to participate in mindful eating (in silence), with instruction from the teacher.
  - o "First look at the food. Pause to contemplate how this food is a gift of the earth, the sky, numerous living beings, and much hard and loving work. Give thanks and gratitude for this food that you are about to eat. [LONG PAUSE]. Then begin by noticing its color, texture, shape. Now, close your eyes and explore the food with your sense of touch. What does this food feel like? Is it hard, soft, squishy? Wet or dry? Notice that you are not being asked to think, but to notice different parts of your experience, using one sense at a time. This is what it means to eat mindfully [SHORT PAUSE]. Now, focus on the smell of the food. Does it smell sweet? Sour? Strong? [SHORT PAUSE]. Now begin eating very slowly. Take one bit first. Notice the sensation on your tongue. Notice the experience of your teeth chewing and tongue tasting. Notice the texture of the food, the way it feels in your mouth. Notice the intensity of its flavor, moment to moment. Swallow [SHORT PAUSE]. Now take a second bite again, notice every sensation of chewing and tasting. Just pay attention moment by moment."

Lesson 5: Mindfulness of Emotions
    Objectives:
- Understand the difference between feelings and emotions
- Practice mindful observation of feelings and emotions
- Develop capacity to experience difficult emotions (distress tolerance)
- Understand where emotions come from

    Practice/Activities:
- Emotions in the Body
  - o Pass out a blank sheet of paper and have everyone draw a simple figure of the body that should cover the entire page (you can model the drawing for them). As you read each emotional words (e.g., anger, happy, sadness, disgust, fear, contempt, jealousy, envy, peaceful), have them mark the body figure using a different colored pencil/crayon where they feel this emotion the most in their body.
  - o Link activity with idea that the body is the vessel for emotions, providing lots of valuable information, and how we can engage mindfulness to receive this information.
- Holding an Ice Cube
  - o Used to develop and understanding of distress tolerance

- o 1ˢᵗ time: Place an ice cube in everyone's hand. Encourage them to say out loud what they notice (e.g., sensations, discomfort, feelings, thoughts, etc.). Collect the ice and process the experience.
- o 2ⁿᵈ time: Give everyone a second ice cube, but this time, guide the students to engage in mindful breathing as they hold the ice, and to notice with curiosity, openness, acceptance, whatever sensations is arising in their hand. Invite them to notice the intensity (strong, mild), duration (short, long), frequency, etc. of the sensation, and to note any thoughts that occur (don't like, unpleasant, etc.) and let it go.
- Emotions Surfing
  - o Invite the bell. "For this brief activity and practice, I want you to recall a recent stressful, or difficult experience, perhaps a fight with a family member, peer, or friend [pause]. Notice any arising thoughts (persistent, nagging thoughts, blaming) as well as any strong emotions (e.g., anger, disappointment, irritation, sadness, etc.) as you recall this memory [pause]. Now, let's try surfing the emotions and riding these emotions out. Begin by noticing how your body is feeling right now. Bring all your attention to the body. Does your face or head feel tight and/or hot? Your shoulders and back tense? Your heart feels squeezed? Whatever the sensations, let's just be with it (don't push it away or grab on to it), but see if you can detect its changing nature; the changes may be very subtle, but see if you can notice how it changes (intensity) from one moment to the next [pause]. Notice also if your mind wants to avoid the feelings/emotions and take you elsewhere, but recognizing this habit, you instead continue to be with the experience by bringing it back to sensations in the body. Allowing yourself to ride the emotions until it loses its energy, recognizing how emotions until it loses its energy, recognizing how emotions come and go like waves of the ocean. If a particular emotion is strong and sticky, you can also do a duck dive by bringing your full attention, focus, and awareness to your breath; engage in mindful breathing for several minutes. You are seeking refuge in your breath as the turbulent sea of emotions passes by, touching stillness in the chaos. Ring bell to end meditation.
- The Roots and Fruits of Emotions
  - o Instruct youth to draw the "roots and fruits of emotions" tree. Emotions= branches, fruits, flowers; Roots=underlying causes

Lesson 6: Mindfulness of Thoughts
  Objectives:
- Introduce the nature of the human mind
- Understand the difference between responding vs. reacting
- Increase one's awareness through seeing thoughts like clouds

  Practices/Activities:
- Two cowboys and horses puzzle
  - o Pass out cowboy puzzle and allow students about 10 minutes to solve the puzzle. Invite students to pay attention to any thoughts (e.g., too hard,

        can't be done, etc.), emotions (e.g., irritation, frustration, joy) they notice as they attempt to solve the puzzle

- Drawing picture back to back
  - o Guide students to pair up and sit back to back
  - o For each pair, pass out an easy to draw picture. One member will describe the picture, the other will draw.
  - o Discuss difficulties in communicating what we see concretely (let alone our emotions, thoughts) and how our memories, perceptions influence our interpretations.
- Cloud Meditation: "Thoughts are just Thoughts"
  - o Ring the bell. "Let us being by focusing on our breath. Slowly taking a breath in…then slowly breathing out…breathing in…and out. As a thought appears in your mind, see the thought like a cloud passing by in the sky. Simply observe and notice if for a moment, with curiosity, openness, and then bring your attention back to your breath…breathing in…and out. Out thoughts are the clouds and we are the sky; as the expansive sky, we are able to see everything, accept, and watch as they pass by us. Notice how your thoughts jump from one to the next, every-changing, impermanent. They come and go. There is no need to attach our identity with them. Breathing in and breathing out…I am the sky and thoughts are just clouds passing by" [LONG PAUSE]. Ring the bell to end meditation.
- Discussion: Where do thoughts come from?
- Reacting vs. Responding
- Choice and Power: True power is being able to choose your response no matter what situation you are in, rather than reacting.

Appendix B

IRB Proposal

APPLICATION FOR IRB REVIEW OF NEW RESEARCH INVOLVING HUMAN SUBJECTS

1.   RESEARCH PROJECT DESCRIPTION

Provide, in lay terms, a detailed summary of your proposed study by addressing each of the following items:

<u>Clearly state the purpose of the study</u> (Usually this will include the research hypothesis)
The proposed dissertation project will highlight and evaluate Peer Engagement and Knowledge (PEAK), a six-week, 12-session group intervention implemented by Family Programs Hawai'i (FPH) in Hilo, Hawai'i. FPH has incorporated developmentally adapted mindfulness-based interventions (MBIs) to reduce multiple health risk behaviors (MHRBs; e.g., alcohol, tobacco, marijuana use) and improve protective mechanisms (e.g., mindfulness, resiliency, self-esteem) among Native Hawaiian/Pacific Islander, Asian American, and multiracial adolescents (ages 14-19 years old) who reside in rural and underserved communities in Hilo. Adolescents' substance use behaviors and psychological well-being (e.g., depression, self-esteem, resiliency, and mindfulness) will be examined pre- and post-intervention to answer the following research questions:

      1.   Does participation in the PEAK intervention change adolescents' alcohol, tobacco, and illicit (i.e.,
        marijuana) drug use?
      2.   Does participation in the PEAK intervention change adolescents' depressive symptomatology?
      3.   Does participation in the PEAK intervention alter participants' well-being as measured by self-
        esteem, resilience, and mindfulness?
      4.   How do participants describe their experiences of engaging in a developmentally adapted MBI?

It is hypothesized that post-intervention, youth will report:
      1. Reductions in alcohol, tobacco, and illicit (i.e., marijuana) drug use.
      2. Reductions in depressive symptomatology.
      3. Overall changes in well-being as measured by higher self-esteem, greater resilience, and more mindfulness.
      4. Positive experiences with a developmentally adapted MBI and improved ability to use mindfulness as a coping strategy.

<u>Background</u> (Describe past studies and any relevant experimental or clinical findings that led to the plan for this project)

During adolescence, youth are confronted with risky situations that require complex decision-making skills. As such, the prevalence of risky behaviors (e.g., substance use, unsafe sex

practices, and aggression) and psychopathology (e.g., depression, anxiety, and conduct problems) significantly increase during this time (Flory, Lynam, Milich, Leukefeld, & Clayton, 2004; Stevens, Brice, Ale, & Morris, 2011). Studies examining MHRBs theorize that due to multi-system influences and shared risk factors risky behaviors develop within the context of one another. Therefore, targeting co-occurring risk behaviors within the same intervention is not only efficacious, but also efficient (Chen, Thompson, & Morrison-Beedy, 2010; Guilamo-Ramos, Litardo, & Jaccard, 2005; Hale, Fitzgerald-Yau, & Viner, 2014; Ritchwood, Ford, DeCoster, Sutton, & Lochman, 2015). Prevention and early-intervention programs that address co-occurring adolescent health risk factors and promote positive health practices are integral to assuring the future health of adolescents, their communities, and societies in general (Curtis, Waters, & Brindis, 2011; Parivizi & Hamzehgardeshi, 2014).

Developmentally adapted MBIs have demonstrated the potential to address multiple psychological, physiological, and behavioral ailments in youth (Burke, 2010; Kallapiran, Koo, Kirubakaran, & Hancock, 2015; Perry-Parrish, Copeland-Linder, Webb, & Sibinga, 2016; Tan & Martin, 2015). The development of maladaptive coping strategies and negative affective experiences, which can stem as learned responses to chronic, contextual stress, may also be disrupted with the use of MBIs (Perry-Parish et al., 2016). Recent research has also examined the feasibility and effectiveness of adapting MBIs for adolescents in vulnerable populations and has found MBIs to be feasible, accepted by youth, and correlated with positive mental health outcomes (Biegel, Brown, Shapiro, & Schubert, 2009; Jee et al., 2014; Himelstein, Saul, & Garcia-Romeu, 2015; Le & Proulx, 2015; Tan & Martin, 2015). By cultivating mindfulness, youth will become more aware of their individual and collective consciousness; thus allowing them to better navigate the multiple systems and contexts in which they are involved.

Despite growing studies related to MHRBs and MBIs, few have examined the efficacy of incorporating MBIs into MHRB prevention/early-intervention programs for adolescents. Furthermore, to my knowledge, there is only one study to date that has examined interventions to treat MHRBs among Native Hawaiian/Pacific Islander youth (Beets et al., 2009), three studies that have investigated interventions to treat MHRBs among Asian American youth (Beets et al., 2009; Fang, Schinke, & Cole, 2010; Taylor, Graham, Cumsille, & Hansen, 2000), and no studies that have examined the use of MBIs to reduce MHRBs among both populations (Hale et al., 2014). Since engaging in mindfulness practice has the potential to affect cognitive and emotional processes such as nonjudgmental acceptance, metacognitive awareness, and self-regulation, incorporating MBIs into programs that target MHRBs in adolescents may reduce engagement in risky behaviors and subsequent adverse outcomes (Biegel et al., 2009; Himelstein et al., 2015). The proposed project builds on research related to MHRBs and MBIs within adolescent populations and will serve as a pilot evaluation of the effectiveness of a group-based intervention that incorporates mindfulness practices for adolescents who engage in risky behavior in Hilo, Hawaiʻi .

Research plan (Provide an orderly scientific description of the intended methodology and procedures as they directly affect the subjects)
This is a longitudinal study with two time points of data collection that examines the effects of the PEAK intervention using pre-/posttest measures of substance use behaviors, depression,

self-esteem, resilience, and mindfulness. Data will be collected from two separate cohorts undergoing the PEAK intervention.

METHOD
The PEAK program manager will allocate 20-30 minutes at the start of the first session and end of the 12th session to administer the demographic survey and the pre- and posttest measures, respectfully, via paper/pencil method. To gain additional insight into participants' experience with a MBI, youth will be recruited during the recruitment process (see Section 2A below for more details) to be a part of a focus group that will be conducted one-week following the 12th session.

RESEARCH MEASURES
Demographic Survey: All participants will complete an nine question demographic survey at the start of the first session. The demographic survey contains questions that ask participants to report their age, grade in school, average GPA, race/ethnicity, gender identity, perceived household income, and additional household information (i.e., highest level of education among parents/guardians, number of siblings/other children under the age of 18 residing in their home).

Substance Use: The Student Survey on Alcohol, Tobacco, and Other Drugs-Behaviors (SSATOD-B) was developed by Johnston and colleagues (2002) as a 10-item pre-/posttest that measures self-reported recent use (past-30 days) of alcohol, tobacco, and other drugs (ATOD) among racially/ethnically diverse eighth, 10th, and 12th grade students. The SSATOD-B has demonstrated adequate reliability and validity for diverse populations and yields alpha coefficients of 0.86-0.91 for cigarette use, 0.72-0.78 for alcohol use, 0.78-0.84 for marijuana use, and 0.49-0.72 for other illicit drug use over the past 30 days (Johnston et al., 2002). Items related to substance use are assessed on a 6-point Likert scale ranging from "0=0 occasions" to "5=20 or more occasions," with the exception of cigarette use, which ranges from "0=not at all" to "5=more than one pack per day." This survey has been adapted to be more culturally and generationally appropriate of participants in this study. For instance, item two on the pre- and posttest will be modified to include the Hawaiian/local term for marijuana ("pakalolo"), which may be more familiar to youth in Hawai'i . In addition, since research indicates that youth in Hawai'i endorse one of the highest prevalence rates of e-cigarette use in the country (Willis, Knight, Williams, Pagano, & Sargent, 2015), an item will be added to assess e-cigarette use separately. Program satisfaction items on the posttest will be eliminated since FPH independently conducts its own program satisfaction survey.

Depression: The Kutcher Adolescent Depression Scale-11 (KADS-11; Brooks, Krulewicz, & Kutcher, 2003) is an abbreviated form of the original KADS-16 and has the highest internal consistency (Cronbach's alpha = 0.84) of all three KADS instruments available for research purposes. Studies demonstrated that the KADS-11 is comparable to other established measures of child/adolescent depression (i.e., Children's Depression Rating Scale-Revised) and is a valid and sensitive measure of changes in depression severity over time. The 11-item KADS has been validated in diverse adolescent populations (ages 12-17 years) and is often used by mental health practitioners and pharmaceutical and research professionals who are attempting to establish efficacy for adolescent depression treatments. The KADS-11 is scored on a 4-point

Likert scale, ranging from "a=0=hardly ever" to "d=3=all of the time." Items 3 and 8 will be modified to exclude verbiage related to "before getting sick," since it does not apply to the parameters of this study.

Suicide Risk Protocol: After participants have completed the assessment packet, the PEAK program manager will scan the KADS-11 to see if any participants endorsed item 11, which assesses for suicidality ("thoughts, plans, or actions about suicide or self-harm"). If any participant endorses this item at or above "b=occasional thoughts, no plans or actions", the PEAK program manager will utilize PEAK's crisis protocol to assess the risk for imminent harm and if deemed necessary, obtain consent from the participant to discuss this issue with their parent/legal guardian before contacting the Child & Family Service Crisis Mobile Outreach Team (1-808-935-2188). The PEAK program director (LCSW) and myself will be on-call during this time. If this participant remains in the study and endorses item 11 at or above "b=occasional thoughts, no plans or actions" at posttest, the PEAK program manager will initiate the aforementioned crisis protocol to obtain consent from the participant to discuss the issue with their parent/legal guardian before contacting the appropriate authorities. A list of local mental health referrals will be provided to this participant and their parent/legal guardian.

Self-Esteem: The Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965) is a widely used self-report pre-/posttest measure of adolescent and adult self-esteem that yields a test-retest reliability of 0.82 and an internal consistency (Cronbach's alpha) of 0.88. The RSES consists of 10-items scored on a 4-point Likert scale (1=strongly agree, 4=strongly disagree), with four items that are reverse scored. Sample items include, "on the whole I am satisfied with myself," and "at times I think I am no good at all."

Resilience: The Children and Youth Resiliency Measure-12 (CYRM-12; Ungar & Liebenberg, 2011) is an abbreviated version of the CYRM-28 that yields a satisfactory Cronbach alpha of 0.84. It is a self-report measure of resilience that includes youth's cultural and contextual factors (i.e., individual, peer, family, and community-level resources). The CYRM-12 was created for use in survey research as a shortened alternative to the full 28-item measure and was validated among a diverse sample of clinical (i.e., child welfare, juvenile justice, community programs) and non-clinical (i.e., school-children) populations aged 10 to 22 years. The CYRM-12 is scored on a 5-point Likert scale (1=does not describe me at all, 5=describes me a lot) and includes questions such as "I know where to go in the community to get help," and "I enjoy my cultural and family traditions."

Mindfulness: The Applied Mindfulness Process Scale (AMPS; Li, Black, & Garland, 2015) is a self-report measure used to quantify how participants in MBIs apply mindfulness practices when experiencing challenges in daily life. The AMPS consists of 15-items, endorsed on a 5-point Likert scale (0=never, 4=almost always), that are consistent with concepts of applied mindfulness such as decentering, positive emotional regulation, and negative emotional regulation. It has demonstrated strong internal consistency ranging between 0.91-0.94 and adequate nomological validity with related constructs (e.g., depression, trait mindfulness, anxiety, stress, general well-being) among college age students. Sample questions include, "I used mindfulness practice to observe my thoughts in a detached manner," and "I used mindfulness practice to stop reacting to my negative impulses."

Focus Group: I will conduct a focus group one-week after the 12th session for each cohort in the study to obtain more information about participants' experiences with a MBI. Participants will be informed of the nature of the focus group (e.g., time commitment, general topic, audio-recorded, incentives) at the time of recruitment. Participation will not affect participant's ability to participate in the remainder of the study, the PEAK intervention, or receipt of incentives for completing the pre-/post- tests. Towards the end of the PEAK intervention, the PEAK program facilitator will remind participants about the focus group. Interested participants will be asked to sign-up to obtain a head-count. Groups will be capped at 10-participants and last one-and-a-half-hours. If there are more than 10-participants, the group will be split evenly into two one-hour focus groups occurring one after another. Sample questions include:

a) Did you practice mindfulness outside of the PEAK intervention? If so, how many minutes/hours per week?
b) Did you have any experience with mindfulness or meditation prior to enrolling in the PEAK program?
c) Can you describe your experience with learning about and practicing mindfulness during the PEAK intervention?
d) Do you think there are any benefits or drawbacks to practicing mindfulness?
e) What was easy and/or hard about practicing mindfulness?
f) Do you think you would use mindfulness as a coping strategy in your daily life?
g) Do you have any desire to learn more about mindfulness after this program?

The PEAK program manager will remove all names and identifying information from participants' surveys before they are mailed via certified mail directly to me. A copy of all surveys will be kept in a locked file cabinet at FPH and in a locked file cabinet in my advisor's office at the University of San Francisco where only she and I will have key access.

To analyze the data, I will conduct a within-subjects analysis of variance (ANOVA) using time (pre- and post-intervention) as the independent variable and substance use, depression, self-esteem, resiliency, and mindfulness, as the dependent variables. Significant effects will be addressed using post hoc paired t-tests to investigate significant differences between pre- and post-intervention.

Qualitative data from the focus groups will be thematically analyzed using Braun and Clarke's (2006) six-step thematic content analysis method. After each focus group, data will be transcribed verbatim by the author for proper coding and data storage, initial codes will be designated to represent interesting responses that occurred throughout the data set, codes will be collated into potential themes, themes will be reviewed and analyzed into a thematic map, themes will be named and defined, and lastly, a full description of each theme will be created.

The quantitative and qualitative data collected from this analysis will be used to describe changes in variables of behavioral health experienced by PEAK program participants. By examining behavioral health risk factors (i.e., substance use and depression) and protective mechanisms (e.g., self-esteem, resiliency, mindfulness), participants may become more aware of their behaviors and make healthier life choices.

Give the location(s) the study will take place (institution, city, state, and specific location)
Family Programs Hawai'i is located at 120 Pauahi St # 306, Hilo, HI 96720. PEAK reserves
low-cost/free community centers and school-locations in Hilo to host their groups. Since this
study is primarily evaluative and relies on the use of pre- and post-assessments, it is not
necessary to reserve additional locations. A memorandum of understanding (MOU) between
FPH and I have been obtained and specifies that FPH will be responsible for reserving the
respective community setting for one additional session to allow for the focus group.

Duration of study project
November 7, 2016 to November 6, 2017

2. PARTICIPANTS

2(a) Participant Population and Recruitment

Describe who will be included in the study as participants and any inclusion and exclusion
criteria.
Participants for this study will be recruited from the PEAK program; as a result, this study's
eligibility criteria are identical to the PEAK program criteria. Participants must be between the
ages of 14 and 19, fluent in English, reside in the Hilo-Laupahoehoe-Waiakea and Ka'u-
Kea'au-Pahoa school complexes, and not exceed criteria for "at-risk level II" as defined by the
State of Hawai'i Office of Youth Services (OYS; OYS, 2007). At-risk level II includes youth
who may be state offenders (chronically truant, runaway), involved in gangs, violence, or
substance abuse, experiencing family problems, and have experienced abuse and/or neglect.

What is the intended age range of participants in the study?
14-19 years old

Describe how participant recruitment will be performed.
I will train the PEAK program manager on recruitment procedures for this study and provide
her with additional information regarding the nature of the study (e.g., pre-/posttest, focus
group, incentives) and recruitment flyers. The PEAK program manager will discuss the option
to be a part of the study with prospective participants during the traditional PEAK enrollment
process, which entails the PEAK program manager speaking with youth who have been
referred to the PEAK program by their teachers, counselors, or other referral sources. This
enrollment process occurs two to six weeks prior to the start of the group. If PEAK
participants aged 14 to 17 are interested in participating in this study, the program manager
will include the study consent form with the PEAK information packet that is already sent
home to parents/legal guardians. The study consent form includes information about the study
(i.e., pre-/ post- tests, focus group, privacy/confidentiality, and consent to audio-recording) and
requires written consent in the form of a signature from the parent/legal guardian and the
youth. Participants will be asked to turn in the necessary forms to the program manager at the
start of the first session. Interested youth who are considered legal adults (ages 18-19) will be
asked to provide their written consent on site and will subsequently be enrolled in the study.

Do the forms of advertisement for recruitment contain <u>only</u> the title, purpose of the study, protocol summary, basic eligibility criteria, study site location(s), and how to contact the study site for further information?   ☒ Yes ☐ No
   *If you answered "no," the forms of advertisement must be submitted to and approved by the IRB prior to their use.

2(b) Participant Risks and Benefits

What are the benefits to participants in this study?
Participant responses and participation in the focus group will aid in informing future PEAK programmatic designs. Throughout the course of the intervention, PEAK participants may demonstrate improvements in behavioral health, as measured by decreased substance use and depressive symptomatology and increased levels of self-esteem, resiliency, and mindfulness. Participants may also become more knowledgeable of overall concepts of adolescent health and be more inclined to utilize mindfulness as a coping strategy during stressful and risky situations.

What are the risks (physical, social, psychological, legal, economic) to participants in this study?
Participants may experience some emotional discomfort when answering survey questions, especially those related to depressive symptomatology and substance use behaviors; however, the risks are minimal.

If deception is involved, please explain. N/A

Indicate the degree of risk (physical, social, psychological, legal, economic) you believe the research poses to human subjects *(check the one that applies).*
☒ MINIMAL RISK: A risk is minimal where the probability and magnitude of harm or discomfort anticipated in the proposed research are not greater, in and of themselves, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.
☐ GREATER THAN MINIMAL RISK: Greater than minimal risk is greater than minimal where the probability and magnitude of harm or discomfort anticipated in the proposed research are greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. If you checked "Greater than Minimal Risk", provide a statement about the statistical power of the study based on intended sample size, design, etc. to test the major hypotheses)

2(c) Participant Compensation and Costs

Are participants to be financially compensated for the study? ☒ Yes ☐ No If "yes," indicate amount, type, and source of funds.

Amount:	Source:	Type (e.g.,. gift card, cash, etc.):
-$10 for completion of pre/post test	-Self	Gift card

-Chance to win an extra $10
after completion of focus
group (5 per focus group)

Will participants who are students be offered class credit? ☐ Yes ☐ No ☒ N/A

If you plan to offer course credit for participation, please describe what alternative assignment(s) students may complete to get an equal amount of credit should they choose not to participate in the study.

Are other inducements planned to recruit participants? ☐ Yes ☒ No If yes, please describe.

3. CONFIDENTIALITY AND DATA SECURITY

Will personal identifiers be collected (e.g., name, social security number, license number, phone number, email address, photograph)? ☒ Yes ☐ No

Will identifiers be translated to a code? ☒ Yes ☐ No

Describe how you will protect participant confidentiality and secure research documents, recordings (audio, video, photos), specimens, and other records.
Participants will be asked to create a unique identification code (e.g., consists of first three letters of their birth month, followed by their birth date) and indicate this at the start of the pre- and posttest measures. There will be no electronic or paper form in the survey that contains the participant's name.

This study involves the audio recording of participants during the focus group. Neither the participant's name nor other identifying information will be associated with the audio, audio recording, or the transcript. Only the research team consisting of myself, my dissertation advisor, and members of the dissertation committee will be able to listen to the recordings. The tapes will be transcribed by the researcher onto an electronic password-protected document and erased once the transcriptions are checked for accuracy. Transcripts of the interview may be reproduced in whole or in part for use in presentations or written products that result from this study. Participants' names or any other identifying information (i.e., participant's voice) will not be used in written products or presentations resulting from the study. The digital voice-recording device will be stored in a locked filed cabinet. All paper work (e.g., informed consents) will be stored in a locked file cabinet at the FPH-Hilo location, where only the PEAK program manager and I will have key-access. A copy of the consent forms and any other paper materials obtained from participants and/or their parents/legal guardians will be kept in a locked file cabinet in my advisor's office at University of San Francisco to which only she and I will have access.

4. CONSENT

4a. Informed consent

Do you plan to use a written consent form that the participant reads and signs? ☒ Yes ☐ No
   *If "no," you must complete Section 4b or 4c below.

If "yes," describe how consent will be obtained and by whom.
If PEAK participants aged 14 to 17, are interested in participating in this study, the program manager will include the study consent form with the PEAK information packet that is already

sent home to parents/legal guardians. The study consent form includes information about the study (i.e., pre-/post- tests, focus group, consent to audio-recording, and privacy/confidentiality) and requires written consent in the form of a signature from the parent/legal guardian and the youth. To culturally adhere to the methods in which PEAK typically obtains informed consent from youth and parents/legal guardians, the child and parent/legal guardian forms in this study have been combined. Interested youth who are considered legal adults (ages 18-19) will be asked to provide their written consent on site. All participants will return the appropriate forms to the program manager at the start of the first session. See respective combined child and parent/legal guardian assent/consent form and adult consent form attached.

If the participants are minors under the age of 18 years, will assent forms be used? ☒ Yes ☐ No ☐ N/A
If "no," please explain.

Upload to the online IRB system the consent form(s) that the participants and/or parent/guardian will be required to sign, and the assent forms for children under the age of 18, if applicable.

Note: All consent forms must contain the following elements (quoted directly from Office for Human Research Protections regulations, available at: http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm#46.116). The IRB has consent templates containing all required elements, **and we ask that you use these templates**.
If you believe it is important to create your own consent form, you are free to do so but please ensure that your consent form has each of the following elements and indicate you have done so by checking this box:

☒ I have chosen to create my own consent form and have ensured that it contains the 8 essential elements listed below:

(1a) A statement that the study involves research, (1b) an explanation of the purposes of the research, (1c) the expected duration of the subject's participation, (1d) a description of the procedures to be followed, and (1e) identification of any procedures which are experimental;

(2) A description of any reasonably foreseeable risks or discomforts to the subject;

(3) A description of any benefits to the subject or to others which may reasonably be expected from the research;

(4) A disclosure of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to the subject;

(5) A statement describing the extent, if any, to which confidentiality of records identifying the subject will be maintained;

(6) For research involving more than minimal risk, an explanation as to whether any compensation and an explanation as to whether any medical treatments are available if injury occurs and, if so, what they consist of, or where further information may be obtained;

(7) An explanation of whom to contact for answers to pertinent questions about the research and research subjects' rights, and whom to contact in the event of a research-related injury to the subject; and

(8) A statement that participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits to which the subject is otherwise entitled**."**

4b. Waiver of documentation of written informed consent (Complete only if answered "no" to 4a)

The regulations allow instances in which the IRB may waive the requirement for documentation of informed consent, that is, the collection of a signed consent form. If you are requesting a waiver of written documentation (signed) of informed consent, please answer the following questions:

Will the only record linking the participant and the research be the consent document and the principal risk to the participant would be from breach of confidentiality?   ☐ Yes   ☐ No

 Do you consider this a minimal risk study that involves no procedures for which written consent is normally required outside of research (see 2B above for definition);?   ☐ Yes   ☐ No

 Explain why you are requesting waiver or modification of documentation of written (signed) informed consent and how you plan to obtain consent.

4c. Waiver or modification of informed consent (Complete only if answered "no" to 4a)

The regulations also provide an opportunity for the IRB to waive the requirement for informed consent or to modify the informed consent process, provided the protocol meets the following criteria:
   (1) The research involves no more than minimal risk to subjects (see 2b above for definition);
   (2) The waiver of alteration will not adversely affect the rights and welfare of the subjects;
   (3) The research could not practicably be carried out without the waiver or alteration; and
   (4) Whenever appropriate, the subjects will be provided with additional pertinent information after participation.

If you are requesting a waiver or modification of informed consent (e.g., incomplete disclosure, deception), explain how your project meets the requirements for waiver or modification of informed consent, as outlined above.

Appendix C

Memorandum of Understanding

This Memorandum of Understanding (MOU) is entered into by and between: Jennifer Ho of the University of San Francisco (USF) and Keith Kuboyama of Family Programs Hawaii (FPH)

A. **Purpose**. The purpose of the MOU is to clearly describe and delineate the agreed upon roles and responsibilities of Jennifer Ho of USF and Keith Kuboyama of FPH. Jennifer Ho and Keith Kuboyama have created a partnership to develop a pre- and post-intervention survey for FPH's Peer Engagement and Knowledge (PEAK) program. This survey will be used to evaluate the effectiveness of PEAK, provide information regarding health risk factors pertinent to adolescent/young adult health (i.e., substance use, depression, self-esteem, resilience, and mindfulness), and inform future PEAK programmatic designs. This research project will also serve as Jennifer Ho's clinical dissertation, which is required for successful matriculation from her Doctor of Clinical Psychology (PsyD) graduate program at USF.

B. **Roles and Responsibilities.**

   Jennifer Ho agrees to:
   - Create a pre- and post-intervention survey that examines changes in substance use behaviors, depressive symptoms, self-esteem, resilience, and mindfulness
   - Gather qualitative data regarding youth's experience with mindfulness
   - Provide PEAK program staff with information and resources required to carry out successful completion of the clinical dissertation (i.e., USF consent forms, participant incentives)
     - Participant incentives will be capped at 57 $10 Target gift cards which accounts for 3 groups of 10 to 14 participants and 3 focus groups (5 gift cards per focus group)

   FPH agrees to:
   - Recruit study participants from the PEAK program enrollees and distribute appropriate consent forms
   - Administer the pre- and post-intervention surveys to participants who consented to participate in the study
   - Maintain copies of consent forms and paper survey materials in a secure and locked file cabinet at the FPH office
   - Provide Jennifer Ho access to the locked file cabinet as needed
   - De-identify and mail completed surveys via certified mail to Jennifer Ho
   - Reserve the PEAK group site for one additional date to accommodate the focus group

C. **Reporting Requirements.** FPH will be responsible for collecting, collating, and mailing the study participants' pre- and post-intervention surveys to Jennifer Ho at ███ ████ ████ San Francisco, CA 94118. Jennifer Ho will be responsible for analyzing the data that is submitted to her and provide a summary of findings and recommendations at the end of the data collection period.

D. Funding. Jennifer Ho is responsible for providing participant incentives (Target gift cards) to FPH three weeks prior to the end of each PEAK group. Incentives will be capped at 57 $10 gift cards.

E. Timeframe. This MOU will be in effect from November 7, 2016 to November 6, 2017.

F. Confidentiality. In order to ensure the safety of clients, all parties to the memorandum of understanding agree to adhere to the confidentiality expectations as outlined by the USF Institutional Review Board policies**.**

G. Agreement. The designated lead agency accepts full responsibility for the performance of the collaborative organizations/agencies.

This Memorandum of Understanding is the complete agreement between Jennifer Ho (University of San Francisco) and Keith Kuboyama (Family Programs Hawaii) and may be amended only by written agreement signed by each of the parties involved.

The MOU must be signed by all partners. Signatories must be officially authorized to sign on behalf of the agency and include title and agency name.

AGENCY A
Authorized Official: _____Jennifer Ho, M.S., Principal Investigator
                                        Signature   Printed Name and Title

Address: University of San Francisco, 2130 Fulton Street, San Francisco CA, 94117
Telephone(s): ~~808-256-3768~~
E-Mail Address: jtho@usfca.edu

AGENCY B
Authorized Official: _____Keith Kuboyama, LCSW, Executive Vise President
                                        Signature   Printed Name and Title

Address: 250 South Vineyard Street, Honolulu HI 96813
Telephone(s): ~~808-521-9531~~
E-Mail Address: kkuboyama@familyprogramshi.org

Appendix D

Study and Recruitment Information for PEAK Program Manager

Jennifer Ho, M.S., is a graduate student at the University of San Francisco in the Department of Integrated Healthcare and is under the advisement of Dr. Dhara Meghani. She has partnered with Family Programs Hawaiʻi to examine the effects of Peer Engagement and Knowledge (PEAK) on various factors of adolescent/young adult health and well-being.

PURPOSE OF STUDY:
The purpose of this study is to examine the effectiveness of the PEAK program on participants' well-being. Behavioral health risk factors (e.g., substance use, depression) and protective mechanisms (e.g., self-esteem, resilience, and mindfulness) will be measured pre- and post-intervention.

DETAILS OF STUDY:

Phase 1: Participants will complete a 20-30 minute paper and pencil survey at the beginning of the first PEAK session and at the end of the 12th session. Jennifer Ho will analyze the surveys of those who have consented to participate in this study for research purposes.

Phase 2: Participants will be asked to participate in an audio-recorded focus group lasting approximately 90-minutes one week after the end of the 12th PEAK session. During this group, the facilitator will ask you to describe your experiences with learning about mindfulness in the PEAK program. Themes from participants' gratitude letters will also be collected and analyzed.

DURATION AND LOCATION OF THE STUDY:
Two sessions lasting no more than 20-30 minutes each; focus group lasting between 90-minutes. The study will take place at the same location as the PEAK group.

POTENTIAL RISKS AND DISCOMFORTS:
We do not anticipate any risks or discomforts from participating in this research; however, participants may experience emotional discomfort when answering select survey questions.

Suicide Risk Protocol: The Kutcher Adolescent Depression Scale-11 (KADS-11) is a screening tool for depressive symptomatology. Item 11 assesses for level of suicidality ("thoughts, plans, or actions about suicide or self-harm"), and as such, positive endorsement on this item will engender the following risk assessment and management protocol. After participants complete the assessment packet, the PEAK program manager will scan the KADS-11 for positive endorsement of item 11. If participants endorse this item at or above "b = occasional thoughts, no plans or actions", the PEAK program manager will utilize PEAK's crisis management protocol to assess risk for imminent harm and if deemed necessary, obtain assent from the participant to disclose pertinent information to their parent/legal guardian before contacting the Child & Family Service Crisis Mobile Outreach Team (1-808-935-2188). The

PEAK program director (who is a licensed clinical social worker) and I will also be on-call during this time. If at posttest, participants endorse item 11 at or above "b = occasional thoughts, no plans or actions," the abovementioned crisis protocol will be enacted to obtain assent from the participant to disclose pertinent information to their parent/legal guardian, contact the appropriate agencies, and provide local mental health referrals.

BENEFITS:
Participation in this study may lead to the following benefits:
1. Learn more about factors that affect health and well-being, such as substance use behaviors, depression, self-esteem, resilience, and mindfulness.
2. Learn more about how others experienced mindfulness and how it can be used as a coping strategy in daily life.
3. Information from this study may also be used to benefit other PEAK participants in the future.

COMPENSATION/PAYMENT FOR PARTICIPATION:
Participants will receive a $10 gift card at the end of the 12th session for completing the pre- and post-surveys. Focus group participants will be entered into a raffle to win an additional $10 gift card (five winners per group). Early withdrawal from the study will not result in any compensation.

VOLUNTARY NATURE OF THE STUDY:
Participation is voluntary. *Youth may skip any questions or tasks that make them uncomfortable, refuse to participate, or discontinue participation at any time without penalty or loss of benefits.* In addition, the researcher has the right to withdraw participants from participation in the study at any time. This study will not affect participant's grades, employment status, or eligibility to participate in the PEAK program.

QUESTIONS AND CONTACT INFO:
Principal Investigator: Jennifer Ho at 808-256-3768 or jtho@usfca.edu.

RECRUITMENT INFORMATION:
Study participants will be recruited from PEAK program enrollees during the traditional PEAK enrollment process. The PEAK program manager will discuss the option to be a part of this study by describing the abovementioned study criteria (i.e., purpose, procedures, measures, incentives, etc.). If youth aged 12-17 are interested in participating in this study, the program manager will include the study consent form with the PEAK packet that is already sent home to parents/legal guardians. The consent form requires the signature of a parent/legal guardian and the youth. Participants will be asked to return the signed forms to the program manager at the start of the first session. Interested youth who are considered legal adults (aged 18-23) will be asked to provide their written consent on site and will subsequently be enrolled in the study. If youth have consented to participating in this study, the PEAK program manager will indicate this information in the allotted space on the pre-intervention survey and only these surveys will be given to Jennifer Ho to analyze.

Appendix E

Parent and Child Consent Form

October 17, 2016

Aloha,

My name is Jennifer Ho and I am a graduate student in the Department of Integrated Healthcare at the UNIVERSITY OF SAN FRANCISCO. I am sending this letter to explain why I would like for your child to participate in my research project. I have partnered with Family Programs Hawai'i to study the effects of the Peer Engagement and Knowledge (PEAK) program on your child's well-being. I am measuring a wide range of factors that are important to adolescent health that include behavioral health risk factors (i.e., substance use, depression) and protective mechanisms (i.e., self-esteem, resiliency, mindfulness).

With your permission, I will ask your child to participate in a study that will take place in the same location as the PEAK program and include:

> Phase 1: Completion of a 20-30 minute paper and pencil survey at the beginning of the first PEAK session and at the end of the 12th session that will be analyzed by me for research purposes.

> Phase 2: Participation in a focus group lasting approximately 1-1.5 hours one week following the 12th PEAK session. The group will focus on participant's experiences with learning about mindfulness in the PEAK program and be audio-recorded.

The potential risks involved in this study are minimal and may include experiencing discomfort when filling out personal information on questionnaires. The potential benefits may include learning more about factors of well-being that are important for your child's behavioral health and learning more about how others have experienced and used mindfulness as a coping strategy in daily life.

Your child will receive a $10 gift card at the end of the 12th session for completing pre- and post-intervention surveys. If your child wishes to participate in the focus group after the 12th session, he or she will be entered into a raffle to win an additional $10 gift card (5 winners per focus group). If you or your child choose to withdraw participation prior to the end of the survey, your child will not receive any compensation.

To protect your child's confidentiality, your child's name will not appear on any record sheets. The information obtained will not be shared with anyone, unless required by law. Names or other identifying information will not be associated with the audio, audio recording, or transcript of the focus group. The tapes will be transcribed by the researcher and erased once the transcriptions

are checked for accuracy. Transcripts of your child's interview may be reproduced in whole or in part for use in presentations or written products that result from this study. Neither your child's name nor any other identifying information (e.g., your child's voice) will be used in presentations or in written products resulting from the study. All reasonable attempts will be made to keep potentially identifying information secure and separate from the collected data. The only people who will have access to your data include the PEAK program manager, my advisor, and myself. The survey records will be maintained by me and my faculty sponsor, Dr. Dhara Meghani.

This letter will serve as a consent form for your child's participation and will be kept in a locked file cabinet at the PEAK program to which only the PEAK program manager and I will have key-access. A copy of the consent forms and any other paper materials obtained from you or your child will also be kept in a locked file cabinet in my advisor's office at UNIVERSITY OF SAN FRANCISCO to which only she and I will have access.

Your child's participation in this study is completely voluntary and will not affect their grades in school or eligibility to participate in the PEAK program in any way. Your child may skip any questions or tasks that make them feel uncomfortable or discontinue their participation at any time without penalty or loss of benefits.

If you have any questions, please contact me at (808) 256-3768 or jtho@usfca.edu. You may also contact my faculty sponsor for this project, Dr. Dhara Meghani at (415) 422-4246 or dtmeghani@usfca.edu. If you have any questions about your child's rights as a participant, you may contact the University of San Francisco IRB at IRBPHS@usfca.edu. **Please have your child return the signed portion of this form to JoYi Rhyss, the PEAK Program Manager at the start of the first PEAK session.**

Mahalo,
Jennifer Ho, M.S.

I have read and understand the above and have had an opportunity to ask questions about this information. I agree to participate in this research project conducted by Jennifer Ho at the University of San Francisco.

_____

CHILD'S PRINTED NAME IF AGED 14-17 YEARS OLD　　　　　　　　　　*DATE*

_____

CHILD'S SIGNATURE IF AGED 14-17 YEARS OLD　　　　　　　　　　*DATE*

I have read and understand the above, have had an opportunity to ask questions about this information, and I consent to my child's participation in this study. I also attest that I am the parent/legal guardian and have the right to consent for the treatment of this child. I understand that I may withdraw my consent and discontinue my child's participation at any time without penalty.

_____

PARENT/LEGAL GUARDIAN'S SIGNATURE　　　　　　　　　　*DATE*

Appendix F

Adult Consent Form

UNIVERSITY OF SAN FRANCISCO
CHANGE THE WORLD FROM HERE

CONSENT TO PARTICIPATE IN A RESEARCH STUDY
Below is a description of the research procedures and an explanation of your rights as a research participant. You should read this information carefully. If you agree to participate, you will sign in the space provided to indicate that you have read and understand the information on this consent form. You are entitled to and will receive a copy of this form.

You have been asked to participate in a research study conducted by Jennifer Ho, a graduate student in the Department of Integrated Healthcare at UNIVERSITY OF SAN FRANCISCO. This faculty supervisor for this study is Dr. Dhara Meghani, a professor in the Department of Integrated Healthcare at UNIVERSITY OF SAN FRANCISCO.

WHAT THE STUDY IS ABOUT:
The purpose of this research study is to examine the effects of the Peer Engagement and Knowledge (PEAK) program on your well-being. I have partnered with Family Programs Hawai'i to measure a wide range of factors that are important to adolescent/young-adult health that include behavioral health risk factors (i.e., substance use, depression) and protective mechanisms (i.e., self-esteem, resiliency, and mindfulness).

WHAT WE WILL ASK YOU TO DO:
During this study, the following will happen:

> Phase 1: You will be asked to complete a 20-30 minute paper and pencil survey at the beginning of the first PEAK session and at the end of the 12th session that will be analyzed by me for research purposes.

> Phase 2: You will be asked to participate in an audio-recorded focus group lasting approximately 1-1.5 hours one week after the end of the 12th PEAK session. During this group, I will ask you to describe your experiences with learning about mindfulness in the PEAK program.

DURATION AND LOCATION OF THE STUDY:
Your participation in this study will involve a total of three sessions. The first two will last about 20 to 30 minutes and the third session will be a discussion with your PEAK peers and myself that lasts up to 1.5 hours. The study will take place at the same location as the PEAK group that you are enrolled in.

POTENTIAL RISKS AND DISCOMFORTS:
We do not anticipate any risks or discomforts to you from participating in this research; however, the research procedures described above may involve minimal emotional discomfort when

answering survey questions, especially those related to depressive symptoms and substance use behaviors. If you wish, you may choose to withdraw your consent and discontinue your participation at any time during the study without penalty.

BENEFITS:
The possible benefits to you of participating in this study are that you will:
1.   Learn more about factors, such as substance use behaviors, depression, self-esteem, resilience, and mindfulness, that affect your health and well-being.
2.   Learn more about how others experienced mindfulness and how you can use it as a coping strategy in daily life.
Information from this study may also be used to benefit other PEAK participants in the future.

PRIVACY/CONFIDENTIALITY:
Any information you provide in this study will be kept confidential unless disclosure is required by law. In any report we publish, we will not include information that will make it possible to identify you or any individual participant. Specifically, we will ask you to create a unique identification code and indicate this information at the start of the pre- and post-intervention survey. All paper work (e.g., informed consent forms and paper surveys) will be stored in a secure and locked file cabinet at the FPH-Hilo location, where only the PEAK program manager and I will have key-access. A copy of the consent forms and any other paper materials obtained from you will also be kept in a locked file cabinet in my advisor's office at UNIVERSITY OF SAN FRANCISCO to which only she and I will have access. Informed consents will be kept for three years, the minimum time prescribed by the University of San Francisco Internal Review Board.

This study involves audio recording of your participation in the focus group. Neither your name nor any other identifying information will be associated with the audio, audio recording, or transcript. Only the research team will be able to listen to the recordings. The tapes will be transcribed by the researcher and erased once the transcriptions are checked for accuracy. Transcripts of your interview may be reproduced in whole or in part for use in presentations or written products that result from this study. Neither your name nor any other identifying information (e.g., your voice) will be used in presentations or in written products resulting from the study.

All audio recordings collected from the focus group will be stored on a digital voice-recording device, until they can be transcribed. When not in use, the digital voice-recording device will be stored in a secure and locked file cabinet, separate from the collected data. All reasonable attempts will be made to keep potentially identifying information secure and separate from the collected data. The only people who will have access to your data include the PEAK program manager, my advisor, and myself.

COMPENSATION/PAYMENT FOR PARTICIPATION:
You will receive a $10 gift card at the end of the 12th session for completing the pre- and post-surveys. If you wish to participate in the focus group after the 12th session, you will be entered into a raffle to win an additional $10 gift card (5 winners per focus group). If you choose to withdraw before completing the study, you will not receive any compensation.

VOLUNTARY NATURE OF THE STUDY:
Your participation is voluntary and you may refuse to participate without penalty or loss of benefits. *You may skip any questions or tasks that make you uncomfortable or discontinue your participation at any time without penalty or loss of benefits.* In addition, the researcher has the right to withdraw you from participation in the study at any time. This study will not affect your grades, employment status, or eligibility to participate in the PEAK program.

OFFER TO ANSWER QUESTIONS:
Please ask any questions you have now. If you have questions later, you should contact the principal investigator: Jennifer Ho at 808-256-3768 or jtho@usfca.edu. If you have questions or concerns about your rights as a participant in this study, you may contact the University of San Francisco Institutional Review Board at IRBPHS@usfca.edu.

I HAVE READ THE ABOVE INFORMATION AND I WILL RECEIVE A COPY OF THIS CONSENT FORM. ANY QUESTIONS I HAVE ASKED HAVE BEEN ANSWERED. I AGREE TO PARTICIPATE IN PHASE 1 AND 2 OF THIS RESEARCH PROJECT.

_____

PARTICIPANT'S PRINTED NAME   *DATE*

_____

PARTICIPANT'S SIGNATURE   *DATE*

Appendix G

Demographic Survey

1. **What is your date of birth?**

_____ (month, day, year)

2. **What grade are you in?**
   ☐ 8   9   ☐ 10   ☐ 11   ☐ 12   ☐ In college
   ☐ Working   ☐ Not in school

3. **What is your average GPA in school?**
   ☐ 3.5-4.0   ☐ 1.5-1.9
   ☐ 3.0-3.4   ☐ 1.0-1.4
   ☐ 2.5-2.9   ☐ Below 1.0
   ☐ 2.0-2.4

4. **What is your race/ethnicity?** *Please check all that apply.*
   ☐ Native Hawaiian   ☐ Japanese
   ☐ Samoan   ☐ Chinese
   ☐ Guamanian/Chamorro   ☐ Filipino
   ☐ White/Caucasian   ☐ Korean
   ☐ Black/African American   ☐ Vietnamese
   ☐ Latino/Hispanic   ☐ Other, please specify: _____

5. **What is your gender identity?**
   ☐ Male   ☐ Female
   ☐ Transgender   ☐ Other, please specify: _____

6. **What is the highest education level attained by a parent, legal guardian, or caregiver in your home?**
   ☐ High school   ☐ Graduate school
   ☐ Some high school   ☐ Some graduate school
   ☐ College   ☐ Not sure
   ☐ Some college   ☐ Other, please specify: _____

7. **What is the average salary of the adults in your home?**
   ☐ Below $25,000/yr   ☐ $55,000-$64,999/yr
   ☐ $25,000-$34,999/yr   ☐ More than $65,000/yr
   ☐ $35,000-$44,999/yr   ☐ Not sure
   ☐ $45,000-$54,999/yr   ☐ Other, please specify: _____

8. How many other brothers, sisters, and/or other children under the age of 18 live with you?

☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ More than 5

Appendix H

The Student Survey on Alcohol, Tobacco, and Other Drugs - Behaviors
(Adapted from Johnston et al., 2002)

For the statement below, please select the answer that shows how many times you did this <u>during the past 30 days</u>.

	Not at All	Less than 1 per day	1 to 5 per day	About 1/2 pack per day	About 1 pack per day	More than 1 pack per day
How frequently have you smoked cigarettes during the past 30 days?						
How frequently have you smoked e-cigarettes during the past 30 days?						

For each statement below, please select the answer that shows how many times you did this activity <u>during the past 30 days</u>.

	0 occasions	1-2 occasions	3-5 occasions	6-9 occasions	10-19 occasions	20 or more occasions
On how many occasions during the past 30 days (if any) have you used marijuana (grass, pot, pakalolo) or hashish?						
On how many occasions during the past 30 days have you had alcoholic beverages to drink (more than just a few sips)? Note: Alcoholic beverages include beer, wine, wine coolers, and liquor.						
On how many occasions during the past 30 days (if any) have you been drunk or very high from drinking alcoholic beverages?						
On how many occasions during the past 30 days (if any) have you taken cocaine in any form (powder, "crack")?						
On how many occasions during the past 30 days (if any) have you sniffed glue, or breathed contents or aerosol spray cans, or inhaled any other gases or sprays in order to get high?						

On how many occasions during the past 30 days (if any) have you used steroids?					
On how many occasions during the past 30 days (if any) have you used club drugs such as "ecstasy," GHB, or Rohypnol?					

Appendix I

Kutcher Adolescent Depression Scale-11 (Adapted from Brooks et al., 2003)

Over the last week, how have you been "on average" or "usually" regarding the following items:

	Hardly Ever	Much of the Time	Most of the Time	All of the Time
Low mood, sadness, feeling blah or down, depressed, just can't be bothered.				
Irritable, losing your temper easily, feeling pissed off, losing it.				
Sleep difficulties - different from your usual, trouble falling asleep, lying awake in bed.				
Feeling decreased interest in: hanging out with friends; being with your best friend; being with your boyfriend/girlfriend; going out of the house; doing school work or work; doing hobbies or sports or recreation.				
Feelings of worthlessness, hopelessness, letting people down, not being a good person.				
Feeling tired, feeling fatigued, low in energy, hard to get motivated, have to push to get things done, want to rest or lie down a lot.				
Trouble concentrating, can't keep your mind on schoolwork or work, daydreaming when you should be working, hard to focus when reading, getting "bored" with work or school.				
Feeling that life is not very much fun, not feeling good when you usually would feel good, not getting as much pleasure from fun things as usual.				
Feeling worried, nervous, panicky, tense, keyed up, anxious.				
Physical feelings of worry like: headaches, butterflies, nausea, tingling, restlessness, diarrhea, shakes, or tremors.				

	No thoughts or plans or actions	Occasional thoughts, no plans or actions	Frequent thoughts, no plans or actions	Plans and/or actions that have hurt
Thoughts, plans, or actions about suicide or self-harm.				

Appendix J

Rosenberg Self Esteem Scale (Adapted from Rosenberg, 1965)

Below is a list of statements dealing with your general feelings about yourself. Please select how strongly you agree or disagree with each statement.

	Strongly Agree	Agree	Disagree	Strongly Disagree
On the whole, I am satisfied with myself.				
At times I think I am no good at all.				
I feel that I have a number of good qualities.				
I am able to do things as well as most other people.				
I feel I do not have much to be proud of.				
I certainly feel useless at times.				
I feel that I'm a person of worth, at least on an equal plane with others.				
I wish I could have more respect for myself.				
All in all, I am inclined to feel that I am a failure.				
I take a positive attitude toward myself.				

Appendix K

Children and Youth Resilience Measure (Adapted from Ungar & Liebenberg, 2011)

To what extent do the sentences below describe you? Select one answer for each statement.

	Not at All	A Little	Some-what	Quite a Bit	A Lot
I am able to solve my problems without harming myself or others.					
I know where to go in the community to get help.					
Getting an education is important to me.					
I try to finish what I start.					
I have people I look up to.					
My parents/caregivers know a lot about me.					
My family stands by me during difficult times.					
My friends stand by me during difficult times.					
I have opportunities to develop skills that will be useful later in life.					
I am treated fairly in my community.					
I feel I belong at school.					
I enjoy my cultural and family traditions.					

Appendix L

Applied Mindfulness Process Scale (Adapted from Li et al., 2015)

I used mindfulness practice to…

	Never	Rarely	Sometimes	Often	Almost Always
Observe my thoughts in a detached manner.					
Relax my body when I am tense.					
See that my thoughts are not necessarily true.					
Enjoy the little things in life more fully.					
Calm my emotions when I am upset.					
Stop reacting to my negative impulses.					
See the positive side of difficult circumstances.					
Reduce tension when I am stressed.					
Realize that I can grow stronger from difficult circumstances.					
Stop my unhelpful reactions to situations.					
Be aware of and appreciate pleasant events.					
Let go of unpleasant thoughts and feelings.					
Realize that my thoughts are not facts.					
Notice pleasant things in the face of difficult circumstances.					
See alternative views of a situation.					

Appendix M

Focus Group Protocol and Sample Questions

Focus groups will occur one week following the 12th PEAK session. The PEAK program

manager will remind study participants about the focus group two weeks before the end of the

PEAK program, create a list of attendees, and secure accommodations for the group. The focus

group facilitator (FPH's postdoctoral fellow in clinical psychology) will lead the group and

record responses via the voice recorder provided for them. Participation will be capped at 10-12

participants for one 90-minute group. Sample questions include:

1. What was your experience with mindfulness or meditation prior to the PEAK program?

2. Tell me about your experience of learning about and practicing mindfulness during the
   PEAK sessions.

3. Have you practiced mindfulness outside of the PEAK program? If so, for how many
   minutes/hours per week?

4. What are some examples of when you used mindfulness outside of the PEAK program?

5. Can you describe how you would continue using mindfulness in your daily life? How
   likely are you to continue using mindfulness and in what situation?

6. Are you interested in learning more about mindfulness now that you have completed this
   program?

7. What is your definition of mindfulness?