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PEDAGOGY

The Effects of Ethnic Identity on Motivation to be Physically Active in Schools in Hawai'i

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Abstract

The Hawaiian Islands and people have been affected by Western influences, and many of them have not benefited from them. Because of this, acculturation has taken place. Briefly, acculturation has been defined as the cultural changes that occur over time, affecting a culture (Redfield et al., 1936). The purpose of this study was to examine the relationship between students' ethnic identity and their motivation towards physical activity (PA), with a particular interest in students who self-identify as Hawaiian. It was generally found that the population of this study was intrinsically motivated toward PA with moderate levels of amotivation. The results of this study highlight the importance for physical education (PE) teachers in Hawaii to engage their students in Hawaiian sports and activities.

Introduction

Explorer Captain James Cook arrived in Hawaii in 1778, a day that would forever change the native Hawaiians, their culture, and their behaviors; not always for the better. Under the rule of King Kamehameha and with the aid of Western weaponry (Kamakau, 1961), the Hawaiian Islands were united in 1810, creating a common cultural identity. Individualistic, tribal-centered notions gave

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way to a collectivist unity among the Hawaiian Islands. For centuries, Hawaiians lived in relative isolation and anonymity, cultures and identity intact. Eventually, however, life in the islands would drastically change with the continued arrival of foreigners. Western businessmen during the late 19th century found the Hawaiian Islands especially alluring as a location for sugar mills and plantations that required labor sourced from places such as Japan, China, and Portugal, generating an influx of diverse cultural practices. By the year 1900, immigrant populations had grown to be over 60,000 Japanese, 25,000 Chinese, and 18,000 Portuguese (Kaeppler, 1972). This would eventually lead to intermarriage between foreigners affecting native Hawaiians (McDermott et al., 1980), adding to one of the many factors affecting Hawaiians. Other events that impacted the Hawaiians included the introduction of Christianity and changes in the law of the land (Kamakau, 1961). This steady chain of events would eventually acculturate Hawaiians evermore away from traditional values of their pure historic cultural identity.

Acculturation and Ethnic Identity Erosion

Acculturation has been defined as cultural change that continues over a period of time between two different cultural groups (Redfield, et al., 1936). Often, within this process, the original culture is altered through greater acculturation as the dominant culture is imposed on traditional culture (Park, 1928). Based on the acculturation by Redfield and colleagues (Redfield et al., 1936), there must first be a form of contact that happens between two different groups (e.g., the arrival of Cook). Next, as new cultures are introduced, some are received voluntarily, while others are overwhelmed due to the dominance of a group. Subsequent acculturation occurs as aspects of a dominant culture are either accepted or resisted by the receiving group. Thus, individuals or a group develop and employ acculturation strategies to cope with cultural changes they experience (Berry, 1997). Deciding on a plan to manage cultural changes depends on the degree to which one maintains a traditional cultural identity and strengthens connections with aspects of the dominant culture (Berry, 1992). Four acculturation strategies include (a) assimilation, (b) integration, (c) separation, and (d) marginalization. Assimilation is when maintaining traditional cultural identity is not important, but strengthening the connection with the dominant culture (e.g.,

wearing clothes and speaking the language of the dominant culture). Integration is when both traditional cultural identity and strengthening relations are important (speaking the language of the dominant culture while maintaining the native language). Separation is when importance is only given to preserving cultural identity (e.g., only affiliates with others of the same ethnic group). Lastly, marginalization is when both cultural identity and relations with the dominant culture are not important (i.e., it does nothing to instill either culture into one's identity), resulting in cultural loss.

Western influences during the 19th century brought significant changes to the Hawaiian lifestyle by introducing a diverse array of cultures. The influx of foreigners to Hawaii brought (a) biological changes, such as a shift in diet and exposure to unfamiliar diseases, (b) economic changes, such as new forms of work and employment, and (c) cultural changes, such as clothes, language, and religion (Berry, 1997). Regardless of the mode of acculturation, lifestyle, well-being, and identity have been significantly impacted by foreign influence.

Ethnicity is either determined at birth or by others, depending on the background of the individual, but how an individual forms their own ethnic identity is developed over time as they build a sense of self and attitudes toward what it means to be a member of that group. (Phinney & Ong, 2007). Several components (Phinney, 1992) significantly impact one's ethnic identity within a group. The first is self-identification, which is how one labels oneself based on their ethnicity ("I am Hawaiian because my dad is Hawaiian"). Second, ethnic behaviors and practices, which is participating in social activities and cultural traditions of the ethnic group (e.g., hula, singing in Hawaiian). Next is affirmation and belonging which is feeling they belong to an ethnic group ("I know that I am Hawaiian, and I feel that I belong with other Hawaiians). Lastly, ethnic identity achievement is having a "firm commitment to one's ethnicity based on an exploration that has led to a clear understanding of ethnicity" (Phinney & Ong, 2007, p. 275). While Hawaiians could strengthen their commitment to their identity by exploring traditional and cultural practices, the exploration of foreign practices introduced an alternative lifestyle that not only impacted the Hawaiian identity but also had an effect on the physical health and well-being of Hawaiians.

Cultural Association with Chronic Diseases

Another acculturation factor affecting the Hawaiian population was the prevalence of chronic diseases. Diseases such as obesity and diabetes are common among Hawaiian and Pacific Islander populations. According to the State of Hawaii Behavior Risk Factor Surveillance Survey (2009), 49.3% of Native Hawaiians in Hawaii are considered obese and have higher rates of chronic diseases associated with obesity in comparison with European Americans (Mau et al., 2009). As of 2018, obesity rates of Hawaiians and Pacific Islanders in Hawaii are at 44.4 % compared to 32.5% of Hawaiians living in the mainland U.S. (America's Health Rankings, 2019). Between 2013 and 2018, the prevalence of diabetes among Hawaiians and Pacific islanders is 15.5% in Hawaii, compared to 10.3% of Hawaiians in mainland U.S. A study on modes of acculturation and diabetes found that Hawaiians in a traditional (or separation) mode were 27% more likely to have diabetes compared to Hawaiians with integrated modes (15.4%), assimilated modes (12.5%), and marginalized modes (10.5%) (Kaholokula, et al., 2008). In Hawaii during 2018, physical inactivity rates of Hawaiians were at 24.7%, much smaller compared to Hawaiians living in the mainland U.S. at 32.1% (America's Health Rankings, 2019). While inclusion of Western athletics is not detrimental to the Hawaiian lifestyle, other Western lifestyle behaviors can be devastating among Hawaiian adults, such as alcohol consumption (28.5%) and smoking (20.8%), only inhibiting the health of Hawaiians with other diseases (America's Health Rankings, 2019).

Hawaiians suffering from chronic disease is prevalent in Hawaii due in part to foreign influence on culture and lifestyle. A Hawaiian can choose to assimilate or separate from the behaviors and practices of Western culture. Still, the strategy to manage one's culture is independent of how others choose to do so. An individual is in control of how they acculturate and is responsible for the consequences associated with it.

Self-Determined Motivation

According to Self-Determination Theory (SDT), motivation is either self-determined: volitional and supported by an individual's sense of self; or controlled, dictated by external forces (Ryan & Deci, 2016). Within SDT, there are three psychological needs that

precede one's motivation: autonomy, competence, and relatedness. Individuals who experience autonomy (a sense of "I can choose"), competence (a sense of "I can do"), and relatedness (a sense of "I belong") are more likely to be motivated in an activity or behavior. When these basic psychological needs are satisfied within the individual, self-determined motivation, mental and emotional growth, and well-being are expected to improve (Standage et al., 2005).

Self-determined behavior can be described by three motivational states: amotivation, lacking motivation; intrinsic motivation, engaging in the activity for reasons within self or in the activity; and extrinsic motivation, engaging for reasons outside of self (Ryan & Deci, 2016). These behaviors fit on a continuum, actuated by either external or internally regulated processes. The low end of the continuum is amotivation, which is the absence of motivation in the activity ("Participating in basketball is not important to me"). Next, extrinsically motivated individuals engage in activity to gain or avoid a consequence ("I am participating so I can get a good grade"). Last, intrinsic motivation occurs when individuals engage in activities that are of interest to themselves ("I surf at the beach because it is fun"). Within external motivation are four types of external regulation (Ryan & Deci, 2016): (a) external regulation, an action or behavior is performed in order to gain a reward (participating in PE to get a good grade) or avoid punishment; (b) introjected regulation, internal rewards are sought for pride, gratifying ego (gaining praise from teacher or peers) or because an individual feels guilty; (c) identified regulation, identifying with the value of a behavior and seeing the importance of it ("I lift weights to get stronger"); and (d) integrated regulation, identifying with the value of a behavior and bringing it into harmony with core interests and values (e.g., "Eating vegetables is important for my health").

It is important to look at contexts such as PE and the effect it has on one's motivation toward their own personal physical activity. Through incorporating self-determination theories, Standage et al. (2003) found that adolescents with higher levels of self-determination in PE class were more likely to be physically active outside of class. Several key findings indicate that an autonomy-supportive environment has a positive impact on adolescents' autonomy, competence, and relatedness. When support is given to personally based compe-

tence, and the adolescent's belief that success is obtained with hard work and a desire to learn, adolescents' autonomy of their achievement increases in PE (Treasure & Robert, 2001). Social contexts that support these three psychological needs increase motivated action (Deci et al., 1991). Studies show that the need for autonomy, competence, and relatedness across ethnically diverse cultures is important (Ryan & Deci, 2016). Chirkov et al. (2003) found that internalization of cultural practices predicted greater psychological well-being in observed college students in South Korea, Russia, Turkey, and the United States. Seeking to meet the three psychological needs is important within an educational setting, as well as self-determined motivation in PE and across diverse ethnic and cultural groups.

The Hawaiian people have been exposed to numerous external factors that have impacted their culture. Thus, the purpose of this study was to examine if there is a relationship between students' ethnic identity and their motivation towards PA and levels of PA, with a particular interest in students who self-identify as Hawaiian.

Methods

Participants and Setting

Participants (n = 301, 165 males, 136 females) comprised sixth-grade (n = 76), seventh-grade (n = 139), and eighth-grade (n = 86) students from a public school (n = 252) and a private school (n = 49), both located in the Hawaiian Islands. Schools were selected based on their higher population of Pacific Islanders and the greater likelihood of participants identifying specifically as Hawaiian.

Of the 301 participants, 24.3% identified as Hawaiian (n = 73), 6.3% identified as Pacific Islander (n = 19), 13.6 % identified as White (n = 41), 13.6% identified as Hispanic (n = 41), 40.5 % identified as Asian (n = 122), 1.3% identified as African American (n = 4), and .3% identified as none of the above mentioned (n = 1). All procedures received university, IRB, district, and school approval before the study began. Parental permission and child assent forms were distributed and signed prior to data collection.

This is a descriptive/cross-sectional study that will use convenience sampling as described to examine the effects of (a) personal ethnic identity and (b) gender of Hawaiian school adolescents on

motivation, physical activity (via pedometer steps) during PE class, and participation in various sporting activities.

Procedures

Prior to data collection, a researcher contacted teachers and principals via email and phone calls to obtain permission to conduct research with their students. The lead researcher arrived at the schools one week prior to data collection to explain the procedures to teachers and students, including the use of pedometers and completing the survey. All teachers (n = 4) taught the same lesson plan, adjusting their 60-minute classes to allow for similar dressing time, gave the same instructions for using pedometers during the lesson, and had the same amount of time for game play, followed by students taking the 10-minute survey.

At the end of the lesson, students received the surveys, recorded pedometer steps, and answered the questions before dressing. The 10-minute survey consisted of 33 items, including gender, six ethnic identity choices, 16 motivational items, six ethnic identity items, and a list of possible sports and extracurricular activities, including traditional Hawaiian activities. Members of the research team and the teacher circulated throughout the class to help clarify or answer students' questions.

Instruments

Multigroup Ethnic Identity Measure—Revised (MEIM-R)

The MEIM-R (Phinney & Ong, 2007) consists of six items, three of which pertain to *exploration* of ethnic identity ("I have often done things that will help me understand my ethnic background better") and three pertaining to *commitment* to ethnic identity ("I have a strong sense of belonging to my own ethnic group"). Participants respond on a 5-point Likert scale with 1 point = "Strongly disagree," 2 points = "Disagree," 4 points = "Agree," 5 points being "Strongly agree," and 3 points = neutral response. An ethnic identity score will be calculated by finding the mean of the respective subscales' items. The MEIM-R has shown reliability and validity among diverse populations such as African American, Asian American, and Latino ethnicities in college but has yet to be used with Hawaiian

and Pacific Islander populations or middle school students (Phinney & Ong, 2006).

Situational Intrinsic Motivation Scale (SIMS)

The SIMS (Guay et al., 2000) is a 16-item, four-subscale instrument that measures the motivational constructs of intrinsic motivation (IM), identified regulation (IR), external regulation (ER), and amotivation (AM) and has been found valid and reliable for use in this population (Standage et al., 2003). Examples of items used include "Because I think that this class is interesting" and "I do PE but I am not sure if it is worth it." Adolescents score items using a scale with 1 point = "Corresponds not at all," 4 points = "Corresponds moderately," and 7 points = "Corresponds exactly." Four subscale scores will likewise be calculated by forming means of respective subscale items. Subscale means will be used for all subsequent motivation and ethnic identity analyses.

Pedometers

The pedometer (Yamax Digi-Walker LS 2525) is a uniaxial, lever-arm pedometer that records step count, distance, and time in activity. For this study, only one pedometer was used and placed on the hip on the left side to track students' PA and to record on their survey (Vincent & Sidman, 2003). When prompted, students placed their pedometers on their hips and reset them to zero prior to beginning class activities. Pedometer counts were recorded at the end of each class and the researchers collected pedometers.

Data Collection

Data was collected one day at the private school, while data was collected over a two-day period at the public school due to having more participants than the researchers had pedometers. Data collection occurred only once for each participating class within one week. Completed surveys were collected at the end of each class and placed in a large sealable folder, kept under the care of one of the researchers. Survey information contained demographic information such as grade and gender, MEIM-R and SIMS item responses, and extracurricular activities. All identifiers were removed once data input and rechecking were complete.

Data Analysis

Demographic variables include grade (sixth, seventh, or eighth), gender (male or female), school (private or public), and student ethnicity. All response scores were input into SPSS.25.0 and inspected for input error. Data from MEIM-R was reduced from 6 items to two subscales (exploration and commitment) by finding the means of corresponding items. Similarly, data from SIMS were reduced from 16 items to four subscales (AM, ER, IR, IM). SIMS. A Self-Determination Index (SDI, Pelletier et al., 1995) by weighting subscales as follows: $2 * IM + IDR - ER - 2 * AM$. The SDI score is a useful measure of one's overall degree of self-determined behavior, and its interpretation is straightforward—the higher the score, the more one is influenced by intrinsic motivations than extrinsic or lack of motivation.

All response variables and subscale means were inspected for normality (skewness and kurtosis), and standard deviations were calculated. Correlation analysis was used to examine the strength and direction of selected variables. MANOVA was used to examine significant differences among group variables (gender and ethnic identity) for selected variables (motivational indices, ethnic exploration, ethnic commitment, and steps). Tests of assumptions for MANOVA were conducted. Follow-up comparisons were made as necessary via one-way ANOVA and *Tukey's HSD* for gender and ethnic identity.

Results

Descriptive statistics for all dependent variables were examined by ethnic group and by gender, and are found in Tables 1 and 2. Taken as a whole (n = 301), participant mean scores revealed that they were generally (a) intrinsically motivated (M_{IM} = 5.73), (b) have good perceptions of identified regulation (M_{IDR} = 5.92), (c) driven by moderate levels of external regulation (M_{ER} = 4.39), (d) had moderate levels of amotivation (M_{AM} = 5.73), and (e) had a positive SDI score (M_{SDI} = 7.76). Mean scores also reveal that participants explore their ethnic identity ($M_{Explore}$ = 3.62) more than not and have a moderate commitment towards embracing their identity (M_{Commit} = 3.86). Further, students' step counts during PE averaged M_{Steps} = 1984. Students also indicated that, on average, they participate in

Table 1

Means, Standard Deviations, and Eta² for all Dependent Variable Measures by Gender

	Male		Female		
	N = 165		*N* = 136		
	M	*SD*	*M*	*SD*	*Eta²*
IM	5.94*	1.17	5.47	1.12	.04
Total	*M* = 5.73, *SD* = 1.17				
IDR	6.01	1.07	5.82	1.01	.01
Total	*M*= 5.92, *SD* = 1.05				
ER	4.55**	1.31	4.20	1.22	.02
Total	*M*= 4.39, *SD* = 1.28				
AM	2.77*	1.61	2.42	1.16	.02
Total	*M*= 2.61, *SD* = 1.43				
SDI	7.80	5.35	7.72	4.74	.00
Total	*M*= 7.76, *SD* = 5.07				
Explore	3.49**	1.04	3.78	.70	.03
Total	*M*= 3.62, *SD* = .91				
Commit	3.74*	.98	4.00	.74	.02
Total	*M*= 3.86, *SD* = .89				
Steps	2072**	610	1877	667	.02
Total	*M*= 1984, *SD* = 642				
Sports in general	2.88***	2.04	2.07	1.70	.04
Total	*M*= 2.52, *SD* = 1.94				
Hawaiian sports	.72	1.04	.53	.79	.01
Total	*M*= .64, *SD* = .94				

Note: * = $p < .05$, ** = $p < .01$, *** = $p < .001$

between two and three sports and physical activities (M_{Sports} = 2.51) outside of PE. Lastly, results suggest that participants engage in one or fewer Hawaiian sports and activities ($M_{HISports}$ = .63).

Bivariate correlations are found in Table 3 and reveal (a) small to moderate correlations among measured variables, (b) the proposed simplex pattern among motivational subscales is supported, with the strongest correlations found in adjacent variables (see Table 3). Notably, the relationships between motivational indices and measures of ethnic identity exhibit small but significant correlations (see Table 3).

MANOVA tests revealed significant gender (Wilks l = .934, p = .018) and ethnic identity effects (Wilks l = .046, $p < .001$). Post-hoc

Table 2
Means, Standard Deviations, and Sample Size for all Dependent Variables by Ethnic Group

	Hawaiian n = 73		Pac. Islander n = 19		White n = 41		Hispanic n = 41		Asian n = 122		African American n = 4	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
IM	5.84	1.23	5.80	.96	5.88	1.19	5.62	1.11	5.61	1.18	6.50	.84
IDR	5.98	.94	5.95	.87	6.18	.90	5.81	1.01	5.79	1.17	6.94	.13
ER	4.28	1.39	4.89	1.39	4.32	1.35	4.21	1.25	4.47	1.18	4.38	1.09
AM	2.18	1.27	3.07	.41	1.87	1.23	2.96	1.60	2.97	1.34	2.00	.79
SDI	9.02	5.03	6.53	5.12	9.87	4.68	6.93	4.49	6.59	5.04	11.56	3.86
Explore	3.72	.87	3.72	1.37	2.98	1.11	3.63	.84	3.75	.71	3.83	.84
Commit	3.94	.94	4.07	1.18	3.36	1.05	3.80	.87	3.94	.70	4.33	.27
Steps	2041	683	2013	596	2182	716	1968	626	1882	590	2049	859
Sports	2.84	2.11	3.16	1.86	3.02	1.98	2.80	1.87	1.98	1.76	2.00	.82
HI Sports	.90	1.11	.79	1.13	.93	1.06	.46	.87	.43	.70	.25	.50

comparisons revealed gender effects (see Table 1) for all response variables with the exception of IDR. Significant ethnic identity effects were found for AM and SDI, ethnic exploration, and ethnic commitment, but not steps (see Table 2). With participants who self-identified as African American, given that only four students lack statistical power, conclusions on findings from this ethnic group cannot be drawn.

Motivational Indices

Intrinsic Motivation. Significant gender effects were noted in IM (F (1, 299) = 12.47, p <.001) with male students being significantly more intrinsically motivated towards PA (M_{IM} = 5.94) than female students (M_{IM} = 5.47, Eta^2 = .04). No significant ethnic identity effect was noted.

Identified Regulation. No significant gender or ethnic identity effects were noted.

External Regulation. Significant gender effects were noted in ER (F (1,299) = 5.89, p = .02), with males being significantly more externally regulated toward PA (M_{ER} = 4.55) than females (M_{ER} = 4.20; Eta^2 = .02). No significant ethnic identity effect was noted.

Amotivation. Significant gender effects were noted in AM (F (1,299) = 4.54, p = .03) with males being significantly more amotivated toward PA (M_{AM} = 2.77) than females M_{AM} = 2.42, Eta^2 =

Table 3
Correlations of Measures of Motivational Indices, Ethnic Identity Measures, and Steps

	IM	IDR	ER	AM	SDI	Mean Explore	Mean Commit	Steps
IM		.77**	.09	-.16**	.69**	.17**	.18**	.22**
IDR			.07	-.25**	.68**	.18**	.22**	.20**
ER				.36**	-.40**	.01	-.002	.07
AM					-.78**	.01	-.03	-.10
SDI						.11	.14*	.18**
Explore							.75**	.03
Commit								.040

Note: * = $p < .05$, ** = $p < .01$

.015). A significant difference was noted where Hawaiian students demonstrated significantly lower AM (M_{AM} = 2.18) than Hispanic students (M_{AM} 2.96; Tukey, p = .046) and Asian students (M_{AM} = 2.97; Tukey, p = .002). Significant differences were noted between White students (M_{AM} (M_{AM} = 1.87) and Pacific Islanders (AM = 3.07; Tukey, p = .023), Hispanic (M_{AM} = 2.96; Tukey, p = .005), and Asian students (M_{AM} = 2.97; Tukey, $p < .001$).

Self-determination Index. No significant gender effects were noted on SDI. There were significant ethnic identity differences noted with Hawaiian students demonstrating significantly higher SDI scores (M_{SDI} = 9.02) than Asian students (M_{SDI} = 6.59; Tukey, p = .012). Also, White students (M_{SDI} = 9.87) demonstrated higher SDI scores than Asian students (M_{SDI} = 6.59; Tukey, p = .004).

Ethnic Identity Measures

Exploration

Significant gender effects were noted in Exploration (F (1,299) = 7.64, p = .01), that female students explore their ethnic identity more ($M_{Explore}$ = 3.78) than male students ($M_{Explore}$ = 3.50, Eta^2 = .025). White

students explore ($M_{Explore}$ = 2.98) their ethnic identity significantly less than students who identified as Hawaiian ($M_{Explore}$ = 3.72; Tukey, $p < .001$), Pacific Islander ($M_{Explore}$ = 3.72; Tukey, $p = .03$), Hispanic ($M_{Explore}$ = 3.63; Tukey, $p = .01$), and Asian ($M_{Explore}$ = 3.75; Tukey, $p < .001$). No significant differences were noted between other ethnic identity groups for ethnic exploration.

Commitment

Significant gender effects were noted in Commitment (F (1,299) = 6.53, $p = .01$), that female students were more committed toward their ethnic identity (M_{Commit} = 4.00) than male students (M_{Commit} = 3.74, $Eta^2 = .021$). White students (M_{Commit} = 3.36) displayed a significantly lesser commitment to their identity than Hawaiian students (M_{Commit} = 3.94; Tukey, $p = .009$), Pacific Islander students (M_{Commit} = 4.07; Tukey, $p = .040$), and Asian students (M_{Commit} = 3.94; Tukey, $p = .003$). No other significant differences were noted for Hispanic students (M_{Commit} = 3.80), and African American students (M_{Commit} = 4.33) compared to other ethnic groups.

Sports and Physical Activities

Physical Activity in PE (Steps). Step counts by gender are found in Table 1 and by ethnic identity in Table 2. Significant gender effects were noted in steps (F (1,299) = 7.05, $p = .01$) with male students having more steps (M_{Steps} = 2072) than female students (M_{Steps} = 1877, $Eta^2 = .023$) during the lesson. No significant step differences were noted between ethnic groups.

Sports in General. Significant gender effects were noted in Sports (F (1,299) = 13.47, $p < .001$) in that male students participated in more sports and physical activities (M_{Sports} = 2.88) than female students (M_{Sports} = 2.07, $Eta^2 = .043$).

Hawaiian Sports and Activities. No significant differences were noted for Hawaiian sports and activities between genders, nor among ethnic groups. Participants as a whole participated in one or fewer Hawaiian sport or activity ($M_{HISports}$ = .64).

Discussion

The purpose of the study was to examine if there is a relationship between students' ethnic identity and their motivation towards

PA and levels of PA, with a particular interest in students who self-identify as Hawaiian.

Motivational Indices

Interestingly, males were more intrinsically motivated as well as more externally regulated towards PA than females. This could be an indicator that males enjoy participating in PA in general but also participate on their own volition during PE because participation in PA is being graded in the class, making the connection that their participation in PA will reward them with a grade (Ryan & Deci, 2016). Yet, in contrast, males were also more amotivated toward PA than females. Studies have shown that students who were more externally regulated experienced anxiety and difficulty handling failure (Deci et al., 1991), and it could be the same reason males are amotivated because of difficulty with aspects of PA in their PE class, and knowing they will not meet expectations of the task and gain no reward even if they do participate. During the lesson, some male students made comments about not taking the activity seriously because it would not affect their grade, or comments about seeing no benefit to themselves if they participated.

Based on the results, the population of participants was generally intrinsically motivated toward PA with moderate levels of amotivation. SDI scores were positive, revealing that students experience greater intrinsic motivation and identified regulation than being amotivated and externally regulated towards PA.

In comparison to Asian students, Hawaiian students and white students have significantly greater SDI, indicating that these ethnic groups demonstrate more intrinsic motivation and identified regulation towards PA. Furthermore, Hawaiian students were significantly less amotivated toward PA than Hispanic and Asian students. White students were also significantly less amotivated toward PA than Pacific Islander, Hispanic, and Asian students. It is interesting that two ethnic groups (Hawaiian and white) have similar motivational measures with high SDI scores (Hawaiian SDI = 9.02, white SDI = 9.87) and low AM (Hawaiian M_{AM} = 2.18, White M_{AM} = 1.87). Reasons for this could be that adolescents have assimilated aspects of the mainstream culture, such as taking a liking to Westernized sports and activities, and are more familiar with the current sport-centered PE curriculum that uses those sports within the curricu-

lum. Results from the current study show students having a greater interest in sports in general (M_{Sports} = 2.52) than they do in Hawaiian sports ($M_{HISports}$ = .64). It was noted in the field notes that students at both school sites participate in Makahiki games, yet it is not a requirement. Although Makahiki games deal with sports and activities that are intended for competition and training, greater awareness and participation in these traditional games could lead to greater participation in other Hawaiian sports and activities, such as diving, canoe paddling, and surfing, and may lead to increased cultural explorations.

Given that the study took place in Hawai'i, teachers need to have an understanding of the *'Ohana* culture (Handy & Pukui, 1950), which is prevalent among not just Hawaiian individuals but throughout the Hawaiian Islands, and can be implemented. Despite the traditional culture of Hawai'i, the demographic makeup of the islands is largely mixed race. Learning how to accommodate these differences in school can be taxing on teachers to differentiate instruction for every student within such a large variety, which could explain why certain ethnic groups demonstrate more intrinsic motivation towards a class, such as PE, than another ethnic group.

Ethnic Identity Measures

Females were significantly more likely to explore their ethnic identity and feel more committed to their ethnic identity than males. While males may demonstrate higher levels of motivational indices, Females have a significantly stronger connection to their ethnic identity through actively exploring their culture and having an even stronger sense of belonging to their ethnic group. This is interesting to consider how males and females were approaching the lesson in their class in terms of Hawaiian ethnicity and being a collectivist culture. Individuals belonging to a collectivist culture have more concern for others within their group and taking care of the group instead of taking care of themselves (Hui & Triandis, 1986). In most of the classes, it was the females that were developing strategy, keeping the team together by defending or moving offensively as a team, and rescuing group members that have been tagged out. Male students generally acted alone, relying more on their speed and agility instead of strategy. Also interestingly, when males scored for

their team, it was because of their individual effort that they won, but when their team lost it was because of others.

White students explored their ethnic identity significantly less than Hawaiian, Pacific Islander, Hispanic, and Asian students. White students were also considerably less committed to their ethnic identity than Hawaiian, Pacific Islander, and Asian students. This is interesting because both Hawaiian and White students had similar motivational measures and SDI scores but differed in how students from these groups connect with their ethnic identity. Components of ethnic identity are interaction within ethnic behaviors and traditions, affirmation and belonging to one's own ethnicity (Phinney, 1992), which is actively being involved within one's ethnic culture, and also having a sense of belonging with others in the same ethnic group. The reason for white students not exploring or being committed towards their ethnic identity could be that they are in a culture that is not marginalized and doesn't need to explore or seek affirmation from other people of the same ethnicity.

Although there are no significant differences noted between gender or ethnic groups with Hawaiian sports and activities, the surprising result is that participants as a whole were involved in less than one Hawaiian sport or activity. This could be in large part due to participation in at least two sports and activities, perhaps assimilating to the mainstream culture in the aspect of sports and activities, which could be more appealing to adolescents than canoe paddling or hula. In the list of sports and activities, under the section marked "other," some students wrote playing video games as their other activity. The list of sports was to help students identify the physical activities that they participate in freely on their own choice, but it was still surprising how little Hawaiian sports and activities were participated in. With items such as video games, smart mobile devices, and toys like kendamas vying for adolescents' attention and time, it is more likely that students will assimilate into a mainstream culture instead of the culture tied to their ethnic identity.

Practical Implications

Participants show involvement in at least two sports, but less involvement in Hawaiian sports and activities. Although Hawaiian students show moderate results in being intrinsically motivated towards PA, it is concerning that they participate in less than one

Hawaiian sport or activity (M_{HISports} = .90). Although both schools participate in Makahiki games and compete with other participating schools, not all schools within the state of Hawai'i participate or have a PE curriculum that is culturally grounded. Hawaiian studies teachers could collaborate more with PE teachers in creating a PE curriculum that infuses culturally grounded activities into the PE program. PE teachers are in a unique position when it comes to creating lessons, as they help students feel successful in the skills they learn. Creating a lesson where students can generate the feeling of success while also understanding the practical application of the skill for themselves will incline them to be more positively motivated towards PA.

Conclusion

This study has shown that Hawaiian students who explore their culture and are committed to their ethnic identity are more likely to be positively motivated towards PA, indicating that there is a relationship between students' ethnic identity and their motivation towards PA. The importance of this study goes beyond trying to have students motivated about PA, but recognizing that the culture of these students plays an important part in their motivation. Classes like Hawaiian Studies are essential in helping to strengthen Hawaiian students' ethnic identity. This reveals a need for a curriculum that enriches both healthy lifestyles and Hawaiian identity to strengthen Hawaiian students' commitment to their culture instead of assimilating to aspects of mainstream culture that are detrimental to their motivation toward PA and overall health. Much of the purpose of engaging in PA is for the purpose of sport and becoming an athlete rather than the purpose of providing help to others, family, and community.

In a time where monitoring the health and PA of young students is being put on the back burner of education, it needs to be noted that it is important in ensuring that the future of one's culture is preserved throughout the coming generations. Much of that preservation is dependent on a healthy generation that is positively motivated towards PA and has a firm grasp of their ethnic identity. It is a culture that is solely based on the protection and care of the community and all its members.

Limitations

The current study had a relatively small sample size with participants coming from two schools on one island. Having a larger sample size and collecting data on school sites from neighboring Hawaiian Islands would enable more in-depth data collection on ethnic identity, particularly among Hawaiian populations.

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