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Original Research

Ethnic Differences in Health-Related Quality of Life, Physical Activity, and Health Locus of Control

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Abstract

International Journal of Exercise Science 18(8): 1072-1085, 2025. https://doi.org/10.70252/STUM6367 This research aimed to better understand the differences in health-related quality of life (HRQoL: general health, physical functioning), physical activity (PA), and health locus of control (HLOC: internal, external-chance, external-powerful others, God) among various ethnic groups. The study's sample included 185 individuals, 22 - 81 years of age, who were attending or employed by one of three religiously-affiliated higher education institutions during the 2020-2021 academic year. Participants voluntarily answered questions about their ethnic identity, HRQoL, PA level, and HLOC. To analyze the interaction of HRQoL, PA, and HLOC, a multiple regression analysis was conducted. Results showed the majority of respondents of all ethnicities had moderate to high levels of PA, which is opposite of CDC data. However, the scores for HLOC and HRQoL varied widely among ethnicities, with minority groups showing higher scores for external HLOC categories (chance, powerful others, God), as well as lower scores for both HRQoL categories (general health, physical functioning). Such differences call for better understanding of HLOC and HRQoL in different ethnic groups, which would allow for better tailoring of health education and promotion programming.

Keywords: Ethnic identity, quality of life, exercise, health control, God locus of health control

Introduction

While most people (99.6%) understand the importance of physical activity (PA), less than half (44%) are able to identify how much is necessary for health benefits.[1] The Centers for Disease Control and Prevention[2] gather data on PA levels among different ethnic groups in the United States. Asians have the highest number of adults who obtain at least some leisure-time PA at nearly 80% (79.9%), followed by Caucasians/Whites (C/Ws) at 73%, Alaska Natives/American Indians (AN/AIs) at 70.9%, Blacks/African Americans (B/AAs) at 70%, and Hispanics/Latinos (H/Ls) at 67.9%.[2] Note that the CDC has not separated out data for Native Hawaiians/Pacific Islanders (NH/PIs). Lack of data on various ethnic groups does not help eliminate the health outcomes gap but instead may widen the gap.

An ongoing question is why many people do not get enough PA. Identified PA influences include motivation, experience, and health locus of control (HLOC). HLOC refers to the position someone takes in regard to control over decisions for their own health. Three subcategories for HLOC are internal, external-chance, and external-powerful others.[3] Internal HLOC indicates the belief that someone controls their own health. External-chance HLOC indicates the belief that their health is controlled by luck or fate. External-powerful others HLOC indicates the belief that someone's health is controlled by significant others, such as a spouse, doctors, and/or a higher power/God. The HLOC category of external-powerful others was expanded to include the God locus of health control (GLHC).[4] This addition aimed to improve understanding of how much a person believes that God controls their health.

Previous studies have shown the connection between HLOC and preventive health behavior, such as PA.[5-6] However, little research has been done on this connection among people of different ethnic identities. A few studies have shown the HLOC and ethnicity relationship: Non-C/Ws have shown higher scores than C/Ws for external-powerful others HLOC, which suggests higher scores for GLHC as well.[7] In regard to GLHC and PA, Robinson and Wicks[8] found B/AA women showed high GLHC and mid-range PA self-efficacy, yet low levels of PA. Research is currently lacking for how HLOC affects PA in other ethnic groups, specifically AN/AIs, Asians, H/Ls, and NH/PIs.

Adequate PA has been shown to have a positive impact on health-related quality of life (HRQoL).[5,9-10] The sample in Anokye et al's[9] study had 90.8% C/Ws, 5.2% Asian and Chinese, 2.5% B/AA, 0.8% mixed, and 0.3% other; however, no data was shared on the ethnic differences among each group's PA and HRQoL, likely because of the very low numbers for non-C/W groups. Lee et al's[10] sample of older adult NH/PIs showed roughly 50% obtained adequate PA and about 30% obtained no PA. Inadequate PA has been significantly associated with low physical HRQoL in Singapore residents, yet sedentary behavior was not associated with low or high HRQoL.[11] Other publications[5,9-10] collected ethnic identity data but each did not report any data by ethnic groups. If looking at HRQoL and other factors, however, data is available for numerous ethnic groups.

A few studies have shown the HRQoL and ethnicity relationship: C/W children have reported significantly higher HRQoL than B/AA children ($F(1,321) = 17.76$, $P < 0.001$, ES = 0.5), even with no PA differences.[12] Ethnic minority (reported as Hispanic, Black, Asian) cancer patients living in New York City were at high risk for food insecurity and related lower HRQoL (all with $P < .001$), as compared to non-minority cancer patients; this relationship was strongest for Black and Latino patients.[13] Among older adults of different ethnic groups living in England, those who identified as Gypsy, Irish traveler, Bangladeshi, Pakistani, and Arab had significantly worse HRQoL than C/W British; this difference was even greater for women.[14] Chinese adults who engaged in higher amounts of PA indicated higher HRQoL and lower perceived stress both pre- and mid-COVID-19.[15] Low HRQoL was frequently correlated with higher prevalence of chronic and comorbid conditions, poor local service support and primary care, and low levels of confidence in healthcare self-management.[14] Ultimately, this has led to decreased levels of HRQoL for ethnic identities other than C/W. The data on HRQoL for various ethnic groups suggest that people of minority ethnic groups (i.e., non-C/W) are more likely to have low

HRQoL. While some of the studies included a variable for PA,[11-12,15] it was not the focus of the studies.

Considering the combination of HLOC, HRQoL, and ethnicity, very little research has been published thus far. One study considered B/AA hemodialysis patients' HLOC, social support, and religiosity, and the impact those had on HRQoL.[16] Regardless of HLOC, social support, and religiosity levels, B/AA hemodialysis patients had low HRQoL physical functioning ($F(3,171) = 2.99$, $P < 0.03$). In removing the social support component, those with both high internal HLOC and religiosity were more likely to show high HRQoL levels ($F(3,171) = 2.67$, $P = 0.1$), but this was not significant. The second and last study found addressing the combination of HLOC, HRQoL, and ethnicity focused on H/Ls living with HIV/AIDS.[17] H/Ls living with HIV/AIDS showed powerful others HLOC was a stronger predictor of high mental HRQoL ($R^2 = 0.296$, $F(6, 65) = 4.57$, $p < 0.001$) than was internal HLOC ($R^2 = 0.258$, $F(6, 65) = 3.76$, $p < 0.003$). This was opposite the findings in other research mentioned above, where internal HLOC was more strongly associated with higher levels of HRQoL than was powerful others HLOC.

A large gap still exists in available data to help in understanding the interactions of PA and HRQoL among ethnic groups, when accounting for HLOC. This intersection is critical for improving health outcomes among different ethnic groups; health educators and program planners can better tailor health education programs to each group, which then may positively influence health outcomes. This study extends existing knowledge by establishing connections among PA, HLOC, and HRQoL in various ethnic groups, many of which have not been reported in research on any connection of PA, HLOC, and/or HRQoL. Figure 1 provides a visual conceptual framework of the influential relationships of ethnicity, PA, HLOC, and HRQoL:

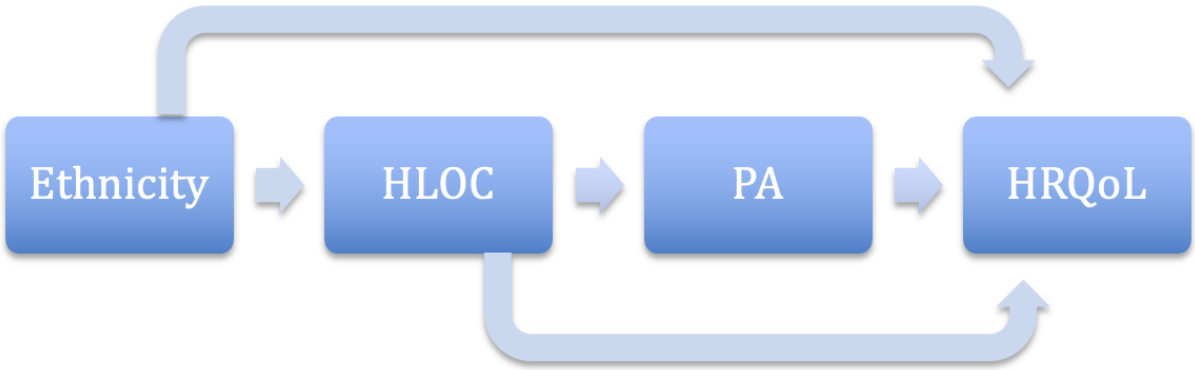

Figure 1. Conceptual framework.

This addresses the relationships between the independent variables of HLOC's internal, external-chance, external-powerful others, and God/GLHC categories, and the dependent variables of PA and HRQoL, specifically highlighting the differences among those results for people of various ethnic identities. The following null hypotheses were tested at the $p = 0.05$ significance level: (1) HLOC will not significantly predict PA; (2) HLOC will not significantly

predict HRQoL-general health; and, (3) HLOC will not significantly predict HRQoL-physical functioning.

Methods

Participants

Institutional Review Board (IRB) approval was obtained through Texas Woman's University (No. IRB-FY2021-100), and fully in accordance with the ethical standards of the *International Journal of Exercise Science*.[18] A priori power analysis used G*Power 3.1.9 to determine the minimum sample size of 85 participants in order to ensure adequate power in finding statistical significance using multiple regression analysis with four predictors: HLOC's (1) internal, (2) external-chance, (3) external-powerful others, and (4) GLHC. Desired power level was set at .80, alpha (α) level at .05, and moderate effect size at .15 (f^2).

A total of 185 students, staff, and faculty completed the self-report survey. Participants' ages ranged from 22 to 81 years; 30.8% identified as male, 68.6% as female, and 0.5% as other. Over 51% of participants identified as C/W (51.4%), 23.8% H/L, 22.2% Asian, 6.5% B/AA, 3.2% NH/PI, 2.7% AN/AI, and a combined 5.4% identified with a category not provided (see Figure 2). Data was analyzed using descriptive and inferential statistics.

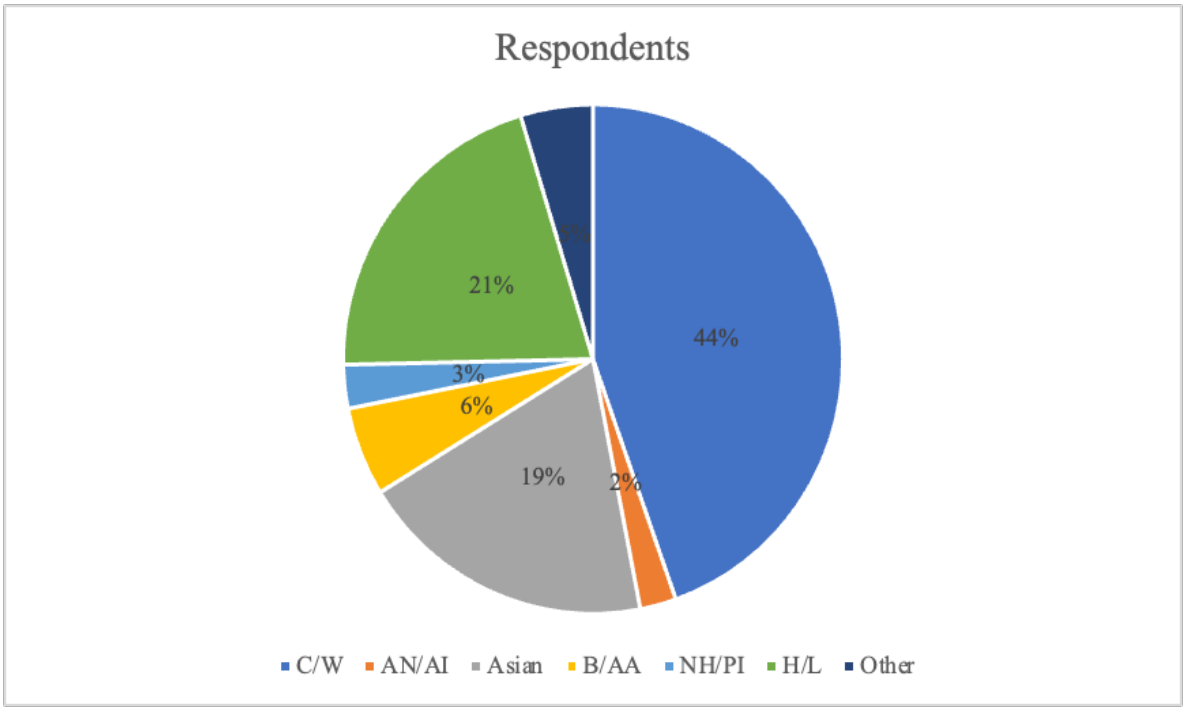

Figure 2. Ethnic Identity of Respondents

Protocol

This study combined four pre-existing questionnaires into one survey using PsychData: (1) International PA Questionnaire (IPAQ),[19] (2) Multidimensional HLOC (MHLC),[3] (3) GLHC,[4]

and (4) Short Form 36 (SF-36) to measure HRQoL.[20] In addition to these, demographic questions were added to the survey prior to dissemination. This article focuses on results from all four questionnaires and the demographic element of ethnic identity.

The IPAQ[19] measures PA for work, transportation, and leisure time, as well as time in sedentary activities. PA level (moderate/vigorous), frequency (number of days each week), and duration (minutes each day), are all included.[21] PA amount is often measured in metabolic equivalents (METs), which provide an estimation of energy used during PA.[22] IPAQ[23] scoring defines the total PA levels as low (less than 600), moderate (at least 600), and high (at least 3,000) MET-minutes per week. IPAQ has been tested in numerous countries and population groups with acceptable validity levels compared to other self-report PA tools. Hagströmer et al[24] discovered positive correlation between IPAQ reports and activity-tracker data (total PA: $p = 0.55$, $P < 0.001$; vigorous PA: $p = 0.71$, $P < 0.001$; moderate PA: $p = 0.21$, $P = 0.051$. Craig et al[25] found Spearman's p around 0.8 and a median p of about 0.30 for criterion validity. Kim et al's[26] meta-analysis found small to medium effect size for convergent validity (0.27-0.49), with lower values for light PA and higher values for vigorous PA. Macfarlane et al's[27] examination of validity and reliability found good test-retest reliability, with correlation coefficients in a range of 0.74-0.97, and small effect sizes (<0.49), Spearman's correlation coefficients for vigorous PA was r = 0.28 and total PA was r = 0.35, as compared to accelerometer data.

The MHLC scales have been used hundreds of times since they were developed, and demonstrated validity.[3] The MHLC scale is divided into three dimensions for locus of control: (1) internal, (2) external-powerful others, and (3) external-chance. The forms, scoring instructions, and suggestions for use, are available online for free at Wallston's[3] Vanderbilt University School of Nursing web-page. High scores in a specific category would indicate an individual's HLOC is strong in that area, whereas low scores in a category would indicate an individual's HLOC is weak in that area. The three-dimensional HLOC scale was found to be valid ($x^2 = 9.55$).[28]

GLHC scores have been found to be internally consistent and positively associated with MHLC scores for chance and other people.[4] The tool has shown to have good internal reliability (a = .81,[29]; a = 0.80,[8]) and be a valid measure of religious beliefs regarding health status control among various ethnic groups.

HRQoL was measured through SF-36,[20] and allowed individuals to self-report their quality of life. Of the eight subscales, only two were used for this study: physical functioning and general health. Scores closer to a total of 100 would indicate high HRQoL, whereas scores closer to zero would indicate low HRQoL. SF-36 questionnaires are available for free in multiple languages on the RAND Corporation website, along with scoring instructions and terms of use. Reliability has been above 0.80, and validity has also been well established.[30-31]

The survey link was sent to all individuals with active institutional email addresses at three religiously-affiliated higher education institutions in California from February through April 2021. These individuals were attending or employed by their institution during the 2020-2021

academic year. Respondents were informed that their participation was voluntary and they could withdraw from the study at any time.

Statistical Analysis

Data analysis was completed using SPSS version 27. Multiple regression analyses were conducted to examine the relationships among PA levels, HLOC (internal, external-chance, external-powerful others, God/GLHC), and HRQoL (general health, physical functioning) among participants. T-tests were used to determine differences between different ethnic groups. Each analysis was tested at the $p = 0.05$ significance level. Effect sizes were as follows: small at around 0.2, medium at around 0.5, and large at around 0.8.

Results

The regression showed that no HLOC category was significantly associated with PA levels ($F(4, 165) = .329$, $p = .858$, $R2 = .008$); therefore the first null hypothesis was not rejected. However, results showed participants reported the following: 66% had high levels of PA (at least 3,000 METS per week), 28% had moderate levels of PA (at least 600 METS per week), and 5% had low amounts of PA (less than 600 METS per week). In comparing ethnic identities, the results showed some differences (see Table 1).

Table 1. PA Percentages for Different Ethnic Groups

	Physical Activity Levels		
Ethnic identity	Low	Moderate	High
C/W	3.5%	36.0%	60.5%
H/L	4.7%	20.9%	74.4%
Asian	10.5%	18.4%	71.1%
B/AA	0%	27.3%	72.7%
NH/PI	0%	40%	60%
AN/AI	0%	40%	60%

HRQoL and HLOC varied widely among the different ethnic identities (see Table 2 and Table 3). Multiple regression analysis showed that, overall, HLOC was a significant predictor of HRQoL - general health ($F(4, 179) = 10.241$, $p = <.001$, $R^2 = .186$), with internal HLOC as the strongest positive predictor ($\beta = .299$; structure coefficient of .767). Small negative predictors included HLOC's external-powerful others ($r_s = -.597$), external-chance ($r_s = -.667$), and GLHC ($r_s = -.414$). In addition, HLOC was a significant predictor of HRQoL - physical functioning ($F(4, 162) = 3.223$, $p = .014$, $R^2 = .074$), with external-powerful others as the strongest negative predictor ($\beta = -.216$ and a structure coefficient of -.942). HLOC's external-chance ($r_s = -.530$) and GLHC ($r_s = -.508$) were small but noteworthy negative predictors in this model, as well. Null hypotheses two and three were rejected. Results for each ethnic identity are summarized below.

Caucasians/Whites

Over 60% of C/Ws reported high amounts of PA, 36% reported a moderate amount, and more than 3% reported a low amount. Compared to non-C/Ws, the C/Ws had higher HRQoL scores for both physical functioning and general health, but less PA, and lower internal HLOC. The

other HLOC categories (external - chance, external - powerful others, GLHC) were significantly lower for C/Ws than for non-C/Ws (chance: $t(183) = -3.123$, $p = .002$, $d = -.459$; powerful others: $t(183) = -3.508$, $p = .001$, $d = -.516$; GLHC: $t(183) = -5.170$, $p = <.001$, $d = -.760$), with moderate-to-large effect sizes.

Table 2. HRQoL Categories and Rankings for Different Ethnic Groups

Ethnic identity	Physical Functioning	General Health
C/W	High	High
H/L	Low	Low
Asian	ND	ND
B/AA	ND	ND
NH/PI	High	ND
AN/AI	ND	Low

ND = no difference shown for this group compared to the other groups.

Table 3. HLOC Categories and Rankings for Different Ethnic Groups

Ethnic Identity	Internal	External-Chance	External-Powerful Others	God
C/W	Low	Low*	Low*	Low*
H/L	ND	Low	High*	High*
Asian	ND	ND	ND	High
B/AA	ND	ND	ND	ND
NH/PI	ND	ND	ND	ND
AN/AI	Low*	High	Low	ND

*Statistically significant to at least $p = .05$. ND = no difference shown for this group compared to the other groups.

Hispanics/Latinos

H/L PA levels were similar to other groups: nearly 75% reported high, almost 21% reported moderate, and more than 4% reported low amounts. H/Ls, as compared to non-H/Ls, had significantly higher HLOC scores for external-powerful others ($t(183) = 2.998$, $p = .003$, $d = .518$) and GLHC ($t(183) = 2.903$, $p = .004$, $d = .502$), both with moderate effect sizes. Compared to non-H/Ls, H/Ls had lower scores for external-chance HLOC and HRQoL - physical functioning and general health. H/Ls showed no difference in scores for internal HLOC, and non-significantly greater PA, as compared to other ethnic groups.

Asians

More than 70% of Asians reported a high amount of PA, 18% reported a moderate amount, and just over 10% reported a low amount. As compared to non-Asians, Asians had non-significantly higher GLHC ($t(183) = 1.643$, $p = .1$, $d = .293$) and less PA, with no differences found for all other variables of interest.

Blacks/African Americans

Over 72% of B/AAs reported a high amount of PA, about 27% reported a moderate amount, and none reported a low amount. Between B/AAs and non-B/AAs, no differences were found

for the other variables of interest in any HLOC category or HRQoL (total HRQoL: $t(183) = -.323$, $p = .747$, $d = -.096$).

Native Hawaiians and Pacific Islanders

About 60% of NH/PIs reported a high amount of PA, 40% reported a moderate amount, and none reported a low amount. As compared to non-NH/PIs, NH/PIs had non-significantly higher HRQoL - physical functioning ($t(183) = .889$, $p = .375$, $d = .370$), lower PA, and no difference in scores for all HLOC categories or for HRQoL - general health.

Alaska Natives and American Indians

AN/AIs reported the same PA levels as NH/PIs: 60% at high, 40% at moderate, and 0% at low. AN/AIs, as compared to non-AN/AIs, had non-significantly higher scores for HLOC's external-chance; no difference in scores for GLHC and HRQoL - physical functioning; and lower scores for HRQoL - general health, HLOC's external-powerful others, and PA. Compared to non-AN/AIs, AN/AIs had statistically significant lower internal HLOC ($t(182) = -2.054$, $p = .041$, $d = -.931$), with a large effect.

Discussion

Physical Activity

The results of this study showed differences among the ethnicities regarding PA: 100% of B/AA, AN/AI, NH/PI reported moderate and high amounts; 90% or more of Asian, H/L, and C/W respondents reported moderate and high amounts. Data from the CDC[31] has shown any PA engagement varies by race/ethnicity. Across the US, C/Ws had the greatest amount of PA (76%), followed by B/AAs (70%), and H/Ls (68%).[32] The Office of Minority Health had only minimal data (reported as "leisure-time" or "no leisure-time" PA) for the other ethnic categories: 41% of AN/AIs reported no leisure-time PA[33]; 41% of Asians reported no leisure-time PA[34]; and 51% of NH/PIs reported no leisure-time PA.[35] Supporting this data, Lee et al's[10] study found that 30% of NH/PI older adults reported no PA; and, Robinson and Wicks'[8] research found B/AA's PA levels were below the recommendations. Data from the present study (see Table 1) are in stark contrast to national PA engagement rates.

Parks and green spaces, which are resources commonly used for obtaining PA, have become fewer and farther between in areas with a high concentration of minority populations.[36] Similarly, lower PA is reported by people living in neighborhoods with high immigrant composition.[37] In looking at the available data, participants in the present study reported more total amounts of PA at both moderate and high levels for each ethnicity. When comparing this to the general population, this study's results suggest that working at or attending a religiously-affiliated institution of higher education has a positive influence on PA levels. People who are more highly educated are likely to have greater amounts of regular moderate to high levels of PA, as compared to those who have lower education levels.[38]

In addition, since the institutions were religiously-affiliated with the Seventh-day Adventist (SDA) church, it is likely that this religious affiliation played a role in PA involvement. Part of the belief system of SDAs includes active engagement in health-promoting activities, such as abstaining from alcohol and tobacco products, eating a primarily plant-based diet, and regular participation in PA.[39] If the respondents in the present study were following these recommendations, then this supports the data for high PA levels across all ethnic identities.

HLOC

Regarding HLOC categories, B/AAs as a group showed no differences from non-B/AAs. This differed from findings by Robinson and Wicks[8] that B/AAs were the most likely group to have high scores for GLHC. In contrast, C/Ws had lower internal HLOC than non-C/Ws, as well as significantly lower scores for all external categories (chance, powerful others, GLHC). This complemented Boyd and Wilcox's[7] findings that non-C/Ws were more likely than C/Ws to have high external scores, specifically high GLHC. Results from the present study suggest that this group of C/Ws may have beliefs that are relatively midline for each HLOC category, indicating no strong HLOC beliefs in a particular direction.

Asians, NH/PIs, AN/AIs, and H/Ls all displayed differences in HLOC. Though scores for NH/PIs showed no specific differences in any category, the other groups only showed the following differences: Asians had higher GLHC, AN/AIs had higher external-chance and -powerful others, and H/Ls had lower external-chance but significantly higher external-powerful others and GLHC. Such results indicate that these individuals are reliant on external forces to control their health. To date, previous literature has not reported HLOC data on these ethnic categories, meaning there is no data with which to compare these findings. This study's data on H/Ls mirrors findings from Burns et al[17] showing high levels of powerful others HLOC.

The high external HLOC scores for certain ethnic groups (Asians, AN/AIs, H/Ls) may be related to their access to health resources, such as information, providers, and the entire health care system in general.[36] When there is low access to health resources, people may be less inclined to take individual control over their health and instead rely on *potentially* available resources, thereby suggesting high external HLOC. Additionally, if and when people have negative interactions with health resources, they may be less willing to trust and utilize those resources in the future, and instead place their trust in God, chance, or themselves. Lastly, there may be other cultural factors in play that were not assessed in this study. Such cultural factors could include traditional beliefs, and health and lifestyle practices – all of which influence someone's HLOC.

HRQoL

When considering HRQoL, C/Ws showed higher levels of physical functioning and general health than did non-C/Ws. In the present study, Asians and B/AAs had no differences in either HRQoL category when compared to non-Asians and non-B/AAs, respectively. Among Chinese, Qi et al[15] noted that high HRQoL was more likely when individuals engaged in high levels of PA. This differs for B/AAs that were in Gu et al's[12] study, who showed lower HRQoL than C/Ws had, even when PA levels were similar for each group.

AN/AIs had lower general health scores but no difference in physical functioning scores when compared to non-AN/AIs. Compared to non-H/Ls, H/Ls had lower scores for both physical functioning and general health. This data is supported by other HRQoL research among minority ethnic groups that found lower HRQoL for minorities as compared to non-minorities (C/Ws).[14] There are many possible explanations for these findings, particularly access to health resources such as health care providers and health information, as well as cultural differences surrounding health care. Oftentimes, minority ethnic groups have experienced greater limitations in accessing health resources, which can mean the difference between wellness and sickness, recovery/healing and injury/disability, death and life; living with comorbidities may lower HRQoL. Even within groups, women can experience greater inequalities than men due to their lower social status,[14] which then influences entire families when these women are primary caretakers. Such a burden may be heavier among certain population groups, and significantly impact any domain of HRQoL and health outcomes.[36]

HRQoL + PA + HLOC

When looking at the combination of HRQoL, PA, and HLOC, a few findings stand out. First, it was not a surprise that C/Ws showed moderate to high levels of PA and had high HRQoL for both categories of interest (physical functioning, general health), yet it was surprising that every HLOC category scored low. This interaction was unexpected. A possible explanation is that there was a great mix of HLOC beliefs among this sample of C/Ws, and therefore no HLOC belief category could be strongest.

Next, even though H/Ls showed large amounts of moderate to high levels of PA, they showed low HRQoL in both categories and low HLOC for external-chance, yet high HLOC for external-powerful others and GLHC. This was only somewhat surprising. The PA level of this study's sample was significantly greater than national data for H/Ls, which suggests other factors are at play for this sample. H/Ls have traditionally been connected with and been devout followers of the Christian faith, so high GLHC was expected. High scores for HLOC's external-powerful others led to more questions, indicating a future area of research. It is widely known that many H/Ls in the US will not seek American-provided healthcare due to lack of providers' cultural competence, language barriers, and few H/Ls in healthcare positions. This leads many H/Ls to seek healthcare outside of the US or forgo needed care. This can significantly negatively impact HRQoL, even if recommended PA levels are obtained.

Last, AN/AI all showed large amounts of moderate to high levels of PA, yet had low HRQoL - general health. AN/AI also had low HLOC for internal and external-powerful others, yet high HLOC for external-chance. This altogether leads to the possibility that there may be low trust among AN/AIs in the healthcare system, leading them to rely on chance or fate.

This article examined the impact that HLOC (internal, external-chance, external-powerful others, God/God locus of health control) has on PA and HRQoL (general health, physical functioning) among those identifying as different ethnicities and attending or working at one of three religiously-affiliated institutions of higher education. Previous research has found a positive correlation between HLOC and PA, HRQoL and PA, and HLOC and HRQoL, yet very

little has been published on the combination of the three elements. The results from this study show that the combination of HRQoL, HLOC, and PA vary among ethnic identities.

This study had several limitations. One such limitation was the use of a self-report PA measurement tool, which allows participants to overestimate their actual PA; to account for this, accelerometers could be used in follow-up studies.[40] Also, there were likely other factors that influenced PA participation, HLOC, and HRQoL for this study's participants, including commitments to work or caring for family members; physical illness and limitations; the COVID-19 pandemic, which impacted workplace; as well as PA and healthcare attitudes, beliefs, and/or practices that were not investigated within this study. Other topics that may have influenced respondents, but were not included in this study, are access to healthcare, public amenities, cultural expectations and traditions, and religious practices and beliefs. Future studies should investigate these areas and their influence on PA, HLOC, and HRQoL. Nevertheless, the majority (95%) of the participants, even when grouped by ethnic identities, reported moderate and high levels of PA, while only 5% of total participants obtained inadequate PA.

This research helps move one step closer in understanding health control beliefs surrounding PA for multiple ethnic groups, and how these health beliefs impact PA levels and HRQoL. The results from this study can support ongoing health intervention and health education efforts among various ethnic populations.

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