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Colonial mentality and diabetes self-management in Filipino Americans

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COI Statement

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Ethical Approval

Ethical approval for this study was initially obtained from the University of Michigan, and IRB oversight was transferred to UCLA. The study was deemed as exempt. All eligible participants were presented with a comprehensive Informed Consent Form and were asked to consent to participate in the study. Permission was obtained to use the Colonial Mentality Scale for Filipino Americans (CMS-FA) from the author.

References

We included more references than allotted to 1) ensure comprehensive coverage of the literature, 2) contextualize the background and findings of this study, and 3) to make sure we acknowledge diverse perspectives and the breadth of relevant literature.

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ABSTRACT

Aim

To examine the correlation between colonial mentality and diabetes self-management among Filipino Americans with T2DM.

Design

Cross-sectional descriptive and correlational survey study.

Methods

This cross-sectional study used the *Colonial Mentality Scale for Filipino Americans* to measure colonial mentality and the *Diabetes Self-Management Questionnaire* to measure self-management behaviors. The online survey was administered to Filipino Americans aged 18 or older with type 2 diabetes who resided in the United States. Recruitment was conducted from 2022 to 2023 through social media and Filipino American organizations. Data from 37 participants were analyzed using descriptive statistics, an independent t-test, and Pearson's *r* correlation.

Results

There was a statistically negative moderate association between two manifestations of colonial mentality (internalized cultural/ethnic inferiority and cultural shame) and several diabetes self-management behaviors: glucose control, healthcare use, and overall self-management. Colonial mentality manifestations were greater in males than females, although not statistically significant. This is the first to empirically study the association between colonial mentality and diabetes self-management in Filipino Americans.

No Patient or Public Contribution

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1 INTRODUCTION

Filipino Americans are the third-largest Asian American ethnic group in the United States; however, they remain understudied in research and are often referred to as the forgotten minority.[1,2] Despite Filipino Americans having positive economic indicators, they have a higher proportion of poor health and higher rates of chronic diseases such as diabetes and hypertension compared to other Asian American groups.[3] Filipino American scholars posit that colonial mentality, a type of internalized racism rooted in colonialism, is intertwined with Filipino Americans' experiences of health inequities, which impact how Filipino Americans manage their health.[4] While we have long understood the influence of social determinants of health (SDOH) on health outcomes, the racial and colonial hierarchies that underpin these SDOH remain underacknowledged and inadequately addressed.[5] Structural racism, including systemic inequities in healthcare and social systems, has been linked to poorer outcomes, suboptimal standards of care, and disparities in diabetes self-management behaviors, particularly among marginalized groups.[6]

2 BACKGROUND

2.1 Colonialism and Colonial Mentality

Colonialism is the process by which one country exerts control over another, often through political, economic, and cultural domination.[4] Filipino Americans are the only Asian American ethnic group that has experienced direct colonization by the United States[7], with the Philippines' long history of colonization contributing to the internalization of colonialism among Filipinos.[8] Rooted in colonialism, colonial mentality involves the internalization of beliefs that shape individual and societal attitudes about cultural identity. Even after independence from Spanish and American rule, colonial mentality continues to overtly or covertly manifest in Filipino culture.[9] Colonial mentality is described as having a sense of cultural shame (i.e., denigration of the Filipino self), feelings of cultural inferiority, colonial debt (i.e., tolerance of historical and contemporary oppression), and within-group discrimination (e.g., discrimination against less-Americanized Filipinos).[4,7,8,10,11] In short, it is characterized by a deferential attitude toward Western culture and the devaluation of Filipino culture.[10] As colonial mentality is a consequence of colonialism and contemporary oppression that persists after colonization, it is an important construct to consider when examining Filipino Americans' experiences of health inequities.[11]

2.2 Type 2 Diabetes and Cultural Aspects of Diabetes Self-Management

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Type 2 diabetes mellitus (T2DM) prevalence in Filipino Americans is 10-16%, significantly higher than in non-Hispanic Whites (7%).[12] They have the second highest prevalence rate among Asian Americans and are almost three times at a greater risk of having T2DM in comparison to White American adults.[13,14] Due to the complexity of T2DM, self-management is integral to living with diabetes. Diabetes self-management is characterized by seven key areas of care: healthy eating, physical activity, medication, blood sugar level, complication risk, emotional well-being, and problem-solving.[15] Factors such as interpersonal relationships, access to healthcare, time, finances, language barriers, and, most notably, culture have been observed to influence self-management.[16,17]

Historical and cultural factors are important considerations in disease and self-management. Because Filipino culture is rooted in colonial history, there is a critical need to examine the role of colonialism on T2DM self-management. Minoritized groups consider feelings of powerlessness as a barrier to managing T2DM.[18] Prior studies that included Filipino Americans identified aspects of Filipino culture as central to diabetes self-management, such as religion, stigma, food, and family.[19] Catholicism, a significant influence from the Spanish colonization, contributes to the belief that diseases are spiritual, treatable by prayer, and beyond the individual's control ("*bahala na*").[19,20] Some Filipinos feel shameful ("*hiya*") or guilty about having diabetes, as this may be considered a burden to the family.[19] Being advised to change one's diet may be met with reluctance due to the social and cultural implications of food for Filipinos.[19,21] Self-management is further complicated by the Filipino culture of prioritizing the family over oneself.[19]

2.3 Colonial Mentality and Type 2 Diabetes in Filipino Americans

The Filipino American experience of health is shaped by racism and colonialism.[4] Despite evidence linking internalized racism to psychological and physical harms among minoritized individuals, it is unclear how colonial mentality influences chronic disease management.[22,23] Although prior studies have examined the relationship between colonial mentality and mental health,[11] no studies have explored how colonial mentality affects self-management of chronic diseases like T2DM, particularly among Filipino Americans. In addition, many intervention studies on self-management do not account for the prevalence of colonial mentality experiences in Filipino Americans with T2DM.[19,24] Typical intervention studies focus on wellness factors such as diet and exercise; however, considering racism and colonialism as a determinant of health is often overlooked.[25]

Decolonizing health research requires assessing the effects of colonization on

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marginalized individuals. We posit an association between colonial mentality (and its manifestations) and diabetes self-management. As we do not currently understand the relationship between colonial mentality and diabetes self-management, exploring its relationship is an important step. With the legacies of colonialism continuing to influence how Filipino Americans think, feel, and act, it is critical to understand self-management within the context of colonial mentality.

3 THE STUDY

3.1 Theoretical Framework

We reformulated[26] McDade et al.'s conceptual model for incorporating biological data into population-based research,[27] investigating the dynamic associations between contextual factors and health (**Figure 1**). This framework emerged from diverse theoretical and disciplinary perspectives that inform the dynamic associations of context, physiology, behavior, and health. Specifically, we used the behavioral mechanisms pathway of the framework, wherein the authors posit that some form of behavioral mechanisms mediates cultural factors and health outcomes. Colonial mentality was used to operationalize cultural factors while diabetes self-management for behavioral mechanisms.

[FIGURE 1 HERE]

3. 2 Aim

The purpose of this study was to explore the relationship between colonial mentality and diabetes self-management among Filipino Americans with T2DM.

4 METHODOLOGY

4.1 Design

This was a cross-sectional study on the association between colonial mentality and self-management of Filipino Americans with T2DM. The study followed the *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE) checklist for cross-sectional studies.[28]

4.2 Study Setting

The study was conducted in the United States, and we used an online survey platform, Qualtrics, to administer the questionnaire.

4.3 Participants/Data Collection

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A sample of Filipino Americans with T2DM were invited to participate in our anonymous online survey. The inclusion criteria were participants of Filipino descent residing in the United States or self-identifying as Filipino American, aged 18 years or older, proficient in English, and diagnosed with type 2 diabetes. Exclusion criteria were individuals not of Filipino American background and those diagnosed with type 1 diabetes or gestational diabetes. Participants were recruited through various modalities, including social media platforms such as Instagram and LinkedIn, in addition to engagement with national Filipino American organizations, including but not limited to the Philippine Nurses Association of America, UCLA's *Samahang Pilipino*, and Filipinx/a/o Community Health Association. These organizations were approached through email or direct messaging on their social media accounts, and a recruitment flyer was provided for their dissemination. The flyer contained a study overview, a link to the Qualtrics survey, and a Quick Response (QR) code for easy access. Data collection took over 17 months, between May 20, 2022, to October 31, 2023.

4.4 Variables

4.4.1 Data source/measurement

4.4.1.1 Health and demographic characteristics. Participants were asked to complete basic sociodemographic data, including age, gender, educational background, place of birth, duration of residence in the United States (if not born in the US), occupation, years since diabetes diagnosis, and any coexisting health conditions.

4.4.1.2 Colonial mentality. We used the Colonial Mentality Scale for Filipino Americans (CMS-FA) to measure colonial mentality.[8] This instrument has 36 items with five subscales: 1) within-group discrimination, 2) physical characteristics, 3) colonial debt, 4) cultural shame and embarrassment, and 5) internalized cultural/ethnic inferiority. Participants rated each item on a scale ranging from 1 (strongly disagree) to 6 (strongly agree). To determine the presence of colonial mentality manifestations, a mean score of at least 3.5 on any of the Colonial Mentality Scale subscales was used as the threshold. Permission to use this instrument was obtained from the author. The reliability coefficients for the subscales range from α = .705 (colonial debt) to .927 (physical characteristics). The overall reliability coefficient was .968.

4.4.1.3 Diabetes self-management. Diabetes self-management was measured using the 16-item Diabetes Self-Management Questionnaire (DSMQ).[29] The scale consists of 16 items distributed into four subscales: healthcare use, glucose control, diet control, and physical activity. Item responses are on a Likert four-point scale with the response options 'applies to me very much' (3 points), 'applies to me to a

considerable degree' (2 points), 'applies to me to some degree' (1 point), and 'does not apply to me' (0 points). Higher scores indicate more optimal self-care. The scale has a long history of reliability and validity testing and offers valuable insights into diabetes self-care and specific self-care activities that impact glycemic control. The DSMQ was designed to facilitate scientific inquiries into psychosocial barriers affecting self-care and glycemic control. The instrument is accessible under a Creative Commons License. The overall reliability score, as measured by Cronbach's alpha (α = .793), was based on 16 items, demonstrating a strong degree of internal consistency in the study's measurements.

4.5 Bias

Our study adopted a cross-sectional design to investigate the association between diabetes self-management behaviors and colonial mentality. To ensure the robustness of our findings, we utilized established measurement tools, specifically the Diabetes Self-Management Questionnaire and the Colonial Mentality Scale, which have demonstrated strong reliability and validity, thereby reducing measurement bias. However, it is crucial to note that the cross-sectional design limits our ability to establish causal relationships, necessitating caution in drawing causal inferences. We recognize the importance of ethical considerations, especially in measuring the sensitive concept of colonial mentality, including informed consent and ensuring participant well-being.

4.6 Study Size

Using G*Power,[30] we chose to include 34 participants in order to have 80% power to detect a medium effect size (ρ) of 0.4 with a significance level of 0.05 (two-tailed test).

4.7 Statistical Analysis

Quantitative survey data were analyzed descriptively using measures of central tendency (means, medians) and variability (*SD*, *IQR*, and frequencies). Bivariate correlation using Pearson's *r* was used to analyze the relationships of the variables with 95%*CI*. We tested assumptions for correlation, including linearity and testing for outliers. We also ran an independent *t*-test to examine if there was a significant difference between genders and colonial mentality/colonial mentality manifestations. Non-binary results for gender have been omitted in the non-parametric analysis due to the small sample size (n = 1). Homogeneity of assumption was tested using Levene's test, and Welch's *t*-test was reported for applicable results with violations of homogeneity of variance. All statistical testing used a significance level of p<.05. SPSS version 17 (IBM Corp, Armonk, NY) was used to analyze quantitative data.

4.8 Missing Data

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We used SPSS Missing Value Analysis to examine missing data. For the main variables in this study (colonial mentality and diabetes self-management), missing data ranged from 0% to 2.9%. Since missing data is less than 5%, we used listwise deletion to address missing data.[31]

4.9 Ethical Considerations

Ethical approval for this study was initially obtained from the [REDACTED] Institutional Review Board (IRB; Protocol ID# [REDACTED]; Approval date: [REDACTED]), and IRB oversight was transferred to [REDACTED] IRB (Protocol ID# [REDACTED]; Approval date: [REDACTED]) after the senior author changed institutions. The study was deemed as exempt. Information about the study's purpose and risks was provided. Before the start of the survey, all eligible participants were presented with a comprehensive Informed Consent Form and were asked to consent to participate in the study. A small compensation (gift card) was provided to participants who completed the study.

5 RESULTS

5.1 Sample Characteristics

A total of 322 participants accessed the survey, and 37 surveys were completed, representing an 11.5% response rate. On average, respondents were middle-aged (*M* = 47.19 years old, *SD* = 17.61), been diagnosed with T2D for 8.33 years (*SD* = 8.27), married or in a domestic partnership (68.8%), mostly Catholic (65.4%), almost half were male (48.6%), with close to three-fourths having at least an associate's degree (73%), and 61.2% reported an income of $75K or above annually. Other sample characteristics are displayed in Table 1.

[TABLE 1 HERE]

5.2 Colonial Mentality by Gender

Male participants reported a higher overall colonial mentality mean (*M* = 3.27, *SD* = 1.14) or median scores (*Mdn* = 3.67 *IQR* = 1.90) compared to females (*M* = 2.99, *SD* = 1.14; *Mdn* = 2.93, *IQR* = 1.45). Similarly, all CM manifestations were higher in males than females, as reported in Table 2. However, an independent t-test revealed no statistically significant difference in colonial mentality scores between females and males.

[TABLE 2 HERE]

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5.3 Correlations

Table 3 shows the variables with statistically significant correlations between colonial mentality, diabetes self-management, and sociodemographic data. Complete correlation matrix could be found in the Supplemental File (See Supplemental File). Of the five manifestations of colonial mentality, internalized cultural/ethnic inferiority, cultural shame, and within-group discrimination were all negatively associated with some form of diabetes self-management activity. Out of all the sociodemographic variables, years living in the US and years living with diabetes were negatively associated with four colonial mentality manifestations and overall colonial mentality score.

Cultural Shame, Internalized Cultural/Ethnic Inferiority, and Self-Management (Glucose Control, overall self-management and healthcare Use)

Internalized cultural/ethnic inferiority was negatively correlated to glucose control (r = -.39, p = .024), healthcare use (r = -.39, p = .024), and overall diabetes self-management (r = -.42, p = .013). Similarly, cultural shame was negatively correlated to glucose control (r = -.38, p = .027), healthcare use (r = -.54, p < .001), and overall diabetes self-management (r = -.44, p = .010). There were no statistically significant associations with other manifestations of colonial mentality and self-management behaviors.

Within-Group Discrimination, Overall CM and Self-Management (Healthcare Use)

Within-group discrimination was negatively correlated with healthcare use (r = -.34, p = .047), but it was not significantly associated with other diabetes self-management behaviors.

The overall colonial mentality score was negatively correlated to healthcare use (r = -.39, p = .023).

Years living in the US and Years living with T2DM

There was a moderate to strong negative relationship between years of living in the US and years living with T2DM with internalized cultural/ethnic inferiority, cultural shame, physical characteristics, within-group discrimination, and overall colonial mentality score. Cultural shame had the strongest negative relationship with years living in the US (r = -.65, p < .001), while internalized cultural/ethnic inferiority had the strongest negative relationship with years living with diabetes (r = -.59, p < .001).

[TABLE 3 HERE]

5.4 Sensitivity Analysis

In a sensitivity analysis removing the outliers present in the DSMQ (healthcare

use, diet, PA) and CMS (CD) subscales, we found that the correlations reported in Table 3 were still statistically significant, and the correlation coefficients of many of the variables increased.

6 DISCUSSION

To our knowledge, this study is the first to examine the association between colonial mentality and diabetes self-management behaviors in a sample of Filipino Americans. Psychological frameworks have conceptualized how colonized individuals internalized oppression regarding their self-identity and culture, demonstrating an association with their psychological well-being.[32–34] Colonized individuals often internalize negative attitudes, including feelings of inferiority and shame toward their ethnic group.[35] For Filipino Americans in this study, we found an association between two manifestations of colonial mentality, internalized cultural/ethnic inferiority, and cultural shame to several self-management behaviors: glucose control, healthcare use, and overall self-management. Cultural inferiority is when individuals view their own cultural or ethnic group as inferior to others, while cultural shame is the feeling of embarrassment or humiliation about one's culture or ethnic background. These two colonial mentality manifestations are inversely associated with glucose control, healthcare use, and overall diabetes self-management. Individuals who experience higher levels of internalized cultural/ethnic inferiority tend to report poorer glucose control, less frequent utilization of healthcare services, and challenges in diabetes self-management practices.

Colonial mentality encompasses cognitive, psychological, and cultural dimensions. Cognitively, colonial mentality involves the internalization of a denigrating view of Filipinos and their culture, leading to a belief that their own cultural or ethnic group is inferior.[7,9] As with internalized racism, which involves adopting negative beliefs and stereotypes about one's racial or ethnic group, colonial mentality operates as a cognitive process through the internalization of systemic or social messages that devalue one's cultural identity. This internalization fosters cognitive biases, such as selectively focusing on the perceived negative aspects of one's culture while diminishing a sense of cultural pride and belonging.[9] These biases can manifest in suboptimal health behaviors, including poor glucose control and reduced engagement with healthcare services, as individuals may undervalue culturally informed practices or experience diminished self-efficacy in managing their diabetes.

Emotionally, colonial mentality is marked by feelings of cultural shame and embarrassment about one's culture or ethnic background.[11,36] This can manifest as a sense of shame ("*hiya*" in Filipino) or guilt about having diabetes, as it may be

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considered a burden to the family. It may create low self-esteem and distress that may directly undermine self-efficacy and motivation for health-promoting behaviors. Addressing these feelings of shame about one's culture through supportive, culturally congruent interventions is essential for improving diabetes self-care and overall well-being.

Culturally, colonial mentality is characterized by a deferential attitude toward Western culture and the devaluation of Filipino culture, and the adoption of dominant cultural norms.[32] This may lead to rejecting culturally rooted health practices or dietary behaviors, even when these practices may support effective diabetes management. For instance, in a qualitative study on Filipino Americans' self-management, participants favored Western dietary patterns over culturally appropriate and health-promoting foods as they perceived the Western diet as superior. [36] Many diabetes interventions do not account for the prevalence of colonial mentality and often focus on diet and exercise, overlooking colonial mentality as a determinant of health.[37]

Prior research indicates that colonial mentality affects mental health and well-being.[7,11,38,39] Colonial mentality leads to negative mental health help-seeking behaviors,[7] negative sense of belongingness, pessimistic attitudes towards personal and group characteristics, and greater levels of depression symptoms.[32] Similar to Filipino Americans' reluctance toward formal mental help-seeking,[39] we posit that Filipino Americans' experience of internalized oppression may be associated with suboptimal self-management behaviors.

Due to the interlocking impact of colonialism and racism on health,[4] a more significant characterization in marginalized colonized groups than understanding racism alone as an SDOH is understanding colonialism and its impact on health. Racism can be understood as the legacy of colonialism, and these two must not be separated.[40] Colonialism has been linked in the literature to chronic conditions like cardiovascular disease through structural experiences of discrimination that intersect with various SDOHs and result in worsened inequalities in health outcomes.[41] Other works have linked colonialism to diabetes in Indigenous people, with a specific connection to intergenerational trauma. Colonialism is a structure, not an event. Therefore, especially when attempting to understand the health of Filipino immigrants and colonized people alike, we must not think of colonialism as a historical event of the past.[41] Understanding colonialism as a structure is critical for the appropriate representation of the cause of health inequity, especially in the Filipino American community.

This study also found a difference in colonial mentality scores between male and female participants. Although our analysis revealed a non-statistically significant

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difference, it is important to note that male participants reported higher overall CM scores than their female counterparts. This difference suggests that gender may play a role in how individuals perceive and internalize colonial mentality, which aligns with broader discussions on gender dynamics and cultural identity.[42] The machismo phenomenon could potentially explain the discrepancy in CM scores between male and female participants.[43] This social display of manliness is characterized by heavily leaning into traditional gender norms and can promote unhealthy representations of gender. With regards to our study, it is possible that our male participants resonated with these social ideations of gender and were more likely to hold other unhealthy cultural depictions and, therefore, lower CM scores. Our findings can be explained by the colonial roots of the machismo phenomenon, where colonial rule is understood to have produced binary and contradictory understandings of masculinity, resulting in this fragmented understanding of masculine expression.[44]

6.1 Limitations and Areas for Future Research

This was a cross-sectional study using self-reported data with a small sample size, so additional caution should be used when generalizing the results of this study. The sample size, while relatively small, was determined to be adequate based on apriori power analysis. While we used non-random convenience sampling to recruit participants, which may limit the generalizability of the findings, this study was designed as an exploratory investigation to provide foundational insights into the relationship between colonial mentality and diabetes self-management among Filipino Americans. The sample may not be representative of Filipino Americans, and future studies using random sampling techniques are recommended to validate and expand upon these findings. Also, the response rate for this study was 11%, which may further introduce bias and limit the representativeness of the findings. Low responses are common challenges in survey-based studies, particularly among underrepresented populations such as Filipino Americans, due to factors such as survey fatigue or cultural barriers to participation.[45] While this limitation does not undermine the internal validity of the findings, it limits the external validity of the results. Future studies should consider strategies to improve response rates, such as piloting, remuneration, multiple recruitment methods, and personalized touch (e.g., sending personalized invitations), as suggested by Shayid and colleagues.[45]

We also acknowledge the need for further reporting on control variables and covariates to address potentially important confounding factors, such as education and acculturation, to enhance the study's scientific rigor and interpretability.

These findings raise several questions for future research consideration. First, what societal and cultural factors might contribute to the gender disparities in colonial mentality scores? Exploring the implications of higher colonial mentality in the context of gender, self-esteem, cultural pride, and mental health is crucial. Understanding the

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underlying influences, such as historical legacies, media representations, and societal expectations, could illuminate this phenomenon. Second, future investigations should use longitudinal designs to confirm the directionality between colonial mentality and self-management. Third, as this study used self-reported measures, physiological measures such as biomarkers should be considered, including examining the biobehavioral sequelae of colonial mentality to diabetes-related outcomes. Fourth, we recommend that future studies incorporate qualitative studies, such as focus groups or in-depth interviews, exploring how Filipino Americans perceive and experience the impact of colonial mentality on their health. This will provide a richer understanding of the cognitive, psychological, and cultural mechanisms involved, offering insights that could inform future interventions. Lastly, the results invite discussions on potential interventions or strategies to mitigate the impact of colonial mentality on diabetes self-management. Addressing and fostering a more inclusive and culturally affirming environment and returning to *kapwa*[46] (shared identity or togetherness; the process of reconnecting to Filipino values and restoring pride in one's cultural identity) can be pivotal in promoting healthy self-identities and reducing the influence of colonial mentality.

7 IMPLICATIONS FOR PRACTICE AND CONCLUSION

Results from this study highlight the need for nurses to become familiar with the concept of colonial mentality in diabetes management. Healthcare providers should consider that colonial mentality, rooted in colonialism, may be associated with challenges in diabetes self-management behaviors. Future interventions could benefit from expanding their focus beyond diet and exercise to also address cognitive, psychological, and cultural factors potentially associated with colonial mentality. Nurses should engage in emancipatory knowing that recognizes the critical impact of racism and colonialism on the health of individuals, families, and communities.[47] Emancipatory knowing includes asking questions about the barriers to health, including structural and institutional barriers such as racism and colonialism.

Racism has increasingly become recognized as a social determinant of health.[48] In many colonized communities, colonialism is also becoming an important social determinant of health. Fostering culturally affirming environments and promoting healthy self-identities will be important for mitigating the influence of colonial mentality. Addressing the legacy of colonialism and its manifestations is crucial for improving diabetes care in Filipino Americans.

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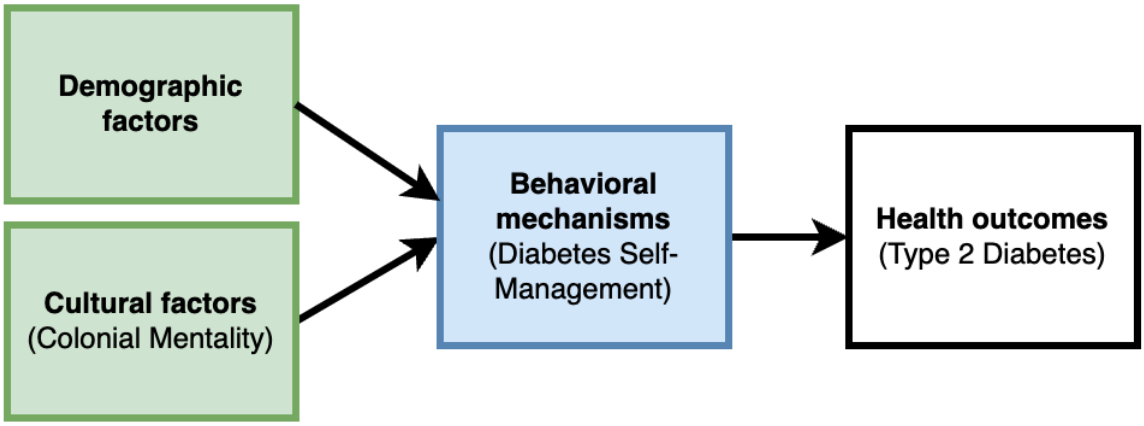


Figure 1.

The theoretical framework adopted from McDade's general conceptual model for incorporating biological data into population-based research.

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Table 3: Select correlations between variables in the data, with a 95% Confidence Interval.

	IC/EI (95%CI)	**CS**(95%CI)	**PC**(95%CI)	**WGD**(95%CI)	**CM**(95%CI)
GLU	-.39* (-.64,.06)	-.38* (-.64,-.05)	-.27 (-.56,.08)(NS)	-.26 (-.55,.08)(NS)	-.29 (-.57,.05)(NS)
HC	-.39* (-.64,.06)	-.54** (-.74,-.25)	-.31 (-.59,.03)(NS)	-.34* (-.61,-.01)	-.39* (-.64,-.06)
DSMQ	-.42* (-.67,.10)	-.44** (-.66,-.12)	-.32 (-.59,.02)(NS)	-.29 (-.57,.06)	-.33 (-.60,.06)(NS)
YRS US	-.59** (-.80,.26)	-.65** (-.83,-.35)	-.52** (-.76,-.17)	-.55** (-.77,-.21)	-.56** (-.78,-.22)
YRS DIAB	-.47** (-.79,.16)	-.46** (-.65,-.04)	-.37* (-.63,-.04)	-.34* (-.61,-.01)	-.39* (-.61,-.06)
HbA1c	.09 (-.26,.42)(NS)	.07 (-.28,.40)(NS)	-.01 (-.35,.34)(NS)	.09 (-.26,.42)(NS)	.08 (-.26,.42)(NS)

Note:

GLU = glucose control; **HC** = healthcare use; **DSMQ** = diabetes self-management questionnaire overall score; **YRS US** = years living in the US, **YRS DIAB** = years living with diabetes; **IC/EI** = internalized cultural/ethnic inferiority; **CS** = cultural shame; **PC** = physical characteristics; **WGD** = within-group discrimination; **CM** = overall colonial mentality score;

***** $p < .05$

****** $p < .01$

NS = not statistically significant at alpha level of < .05.

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Table 1. Study Participant Characteristics (*N* = 37)

Characteristic	***n* (%) for categorial variables** ***M* (*SD*) for continuous variables**
Education	
Associates or technical degree	3 (9.4%)
Bachelor's degree	14 (43.7%)
Graduate or professional degree	6 (18.8%)
High School or General Education Diploma	2 (6.3%)
Some college, but no degree	7 (21.9%)
Marital Status	
Divorced	1 (3.1%)
Married/Domestic Partner	22 (68.8%)
Single (never married)	8 (25.0%)
Widowed	1 (3.1%)
Income (annual)	
< $25,000	4 (12.9%)
$50-74K	5 (16.1%)
$75-99K	9 (29.0%)
$100-149K	11 (35.5%)
>$150K	2 (6.5%)
Religion	
Atheist	2 (7.7%)
Buddhist	1 (3.8%)
Catholic	17 (65.4%)
Christian - non-Catholic	4 (15.4%)
Islam	2 (5.7%)
Employment	
Working	25 (78.1%)
Unemployed	1 (3.1%)
Retired	6 (18.8%)
Comorbidities	
Hypertension	15
Hyperlipidemia	9
Other cardiovascular disease	6
Overweight/obese	10
Chronic Kidney Disease	3
Family history of diabetes (any type)	
Yes	25 (71.4%)
No	8 (22.9%)
Unsure	2 (5.7%)
Birthplace	
Philippines	27 (77.1%)
United States	8 (22.9%)
Gender	
Female	14 (40.0%)
Male	17 (48.6%)
Non-binary	1 (2.9%)
Years with diabetes	*M* = 8.33 (*SD* = 8.27)
Most recent HbA1c	*M* = 7.31 (*SD* = 1.72)
Duration living in the US (for those born outside of the US; yrs.)	*M* = 23.88 (*SD* = 2.78)
Age (years)	*M* = 47.19 (*SD* = 17.60)

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Table 2. Independent t-test comparing colonial mentality between females and males.

Colonial mentality/manifestations	Females		Males		t	df	*p*
	M	SD	M	SD			
Colonial Mentality score (overall)	2.99	.85	3.27	1.14	-.781	29	.220
Cultural inferiority	2.61	1.04	3.01	1.27	-.940	29	.178
Within group discrimination	3.05	.94	3.32	1.23	-.675	29	.253
Physical characteristics	3.05	.94	3.25	1.37	-.490*	28.132	.628
Colonial debt	3.38	.67	3.71	.71	-1.317	29	.099
Cultural shame	2.57	1.41	2.87	1.57	-.553	29	.292

Note: *Welch's t is reported due to a violation of homogeneity of variance.

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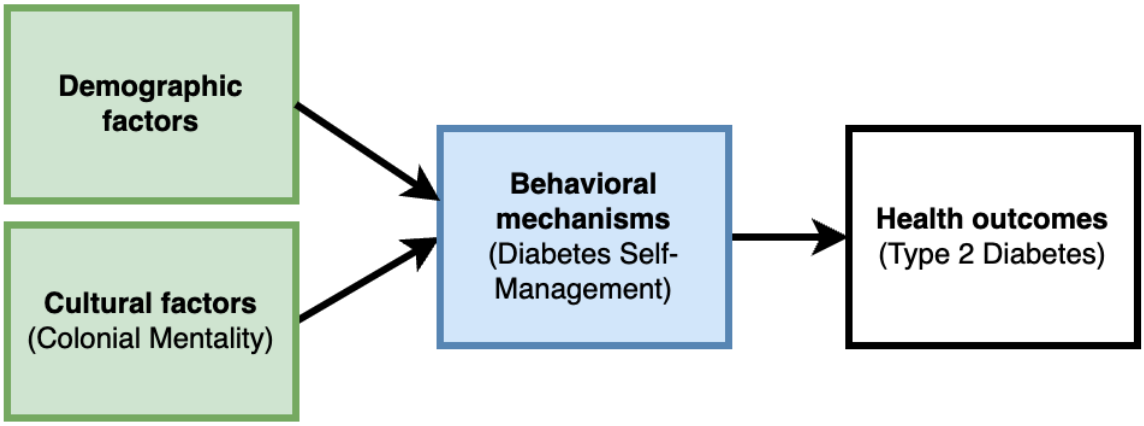


Figure 1.

The theoretical framework adopted from McDade's general conceptual model for incorporating biological data into population-based research.