

Systematic Review for Survey Instruments to Measure Cultural Identification of Native Hawaiians, Pacific Islanders, and Filipinos

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Abstract

Numerous studies have used survey instruments to measure the degree of cultural identity/identification for a racial group to examine how they identify with their heritage or cultural group. However, only a few systematic reviews have summarized the survey instruments for Native Hawaiians, Pacific Islanders, and Filipinos. This systematic review aimed to summarize reliable and validated survey instruments that assessed the cultural identity/identification of Native Hawaiians, Pacific Islanders, and Filipinos in 3 steps: (1) identifying studies that meet the inclusion and exclusion criteria; (2) evaluating the psychometric properties of the instrument with reported validity and reliability test results; and (3) summarizing the selected studies. A search was conducted in PubMed, PsycINFO, Web of Science, and Health and Psychosocial Instruments databases for published articles related to the cultural identification for the 3 racial groups. Sixteen unique articles met the inclusion/exclusion criteria: 7 for Filipinos, 3 for Native Hawaiians, 1 for Pacific Islanders, 2 for Asian Americans, and 3 for non-specific Indigenous people. Three reviewers assessed the psychometric properties of the 16 articles using the pre-determined criteria and summarized the survey instruments and study outcomes. All the selected articles discussed their survey instrument's validity. This review can serve as a resource for researchers who want to apply a culturally tailored survey instrument for Native Hawaiians, Pacific Islanders, and Filipinos in their research studies.

Keywords

psychometric properties, reliability and validity, cultural identity, cultural identification, Hawaiian, Pacific Islander, Filipino

Abbreviations

AAMAS = Asian American Multidimensional Acculturation Scale
ASASFA = A Short Acculturation Scale for Filipino-Americans
ARSMA = Acculturation Rating Scale for Mexican Americans
CFA = confirmatory factor analysis
CFI = comparative fit index
EFA = exploratory factor analysis
ESFA = Enculturation Scale for Filipino Americans
ESFA-S = Enculturation Scale for Filipino Americans-Short
MEIM = Multigroup Ethnic Identity Measure
PCA = principal component factor analysis
PAF = principal axis factor analysis
RMSEA = root mean square error approximation
SASH = Short Acculturation Scale for Hispanics
SL-ASIA = Suinn-Lew Asian Self-Identity Acculturation Scale
SRMR = standardized root mean square residual
TLI = Tucker-Lewis index

Introduction

Cultural identity/identification has been described as an attachment to a heritage or cultural group or a sense of belonging.¹

It has also been described in the context of values, such as guiding principles, meaningful symbols, and lifestyles that individuals share with others.² Since culture is a dynamic factor influencing an individual's values and beliefs, developing an effective instrument to measure the degree of cultural identity/identification is challenging.

Past studies developed survey instruments to measure the degree of cultural identity/identification of various racial/ethnic groups. Marin et al developed the Short Acculturation Scale for Hispanics (SASH) consisting of 12 items (questions).³ Cuellar et al developed a more targeted instrument, the Acculturation Rating Scale for Mexican Americans (ARSMA).⁴ The revised version of this scale, ARSMA-II, assessed the acculturation levels of Mexican Americans using fewer items. The study reported the scale's psychometric properties, such as construct validity, criterion validity, and internal consistency.⁵ Numerous studies reported the association between health conditions and self-identification with culture measured by an instrument, including the aforementioned instruments.⁶⁻¹¹

Native Hawaiians, Pacific Islanders, and Filipinos have often been the focus of health-related studies in Hawai'i due to their level of health disparities. Since they have unique cultures and colonization histories, past studies have developed survey instruments to assess self-identification levels with their racial cultures. However, some studies do not report the instrument's psychometric properties. Researchers may want to review the instrument's psychometric properties before using it in a study, given that validity greatly affects the ability of the survey to truly measure issues of importance. A few systematic reviews have summarized the availability of survey instruments applicable to Pacific people.^{12,13} However, to the authors' knowledge, no study reviewed the instruments specifically for the 3 racial groups. The purpose of this study was to summarize existing survey instruments that measure the degree of cultural identity/identification for Native Hawaiians, Pacific Islanders, and Filipinos. The review included information on the psychometric properties of the instruments to provide resources for validated and reliable survey instruments for health-related studies.

Methods

Selection Process

The current study was performed according to the PRISMA 2020 guidelines for reporting systematic reviews.¹¹ The authors

developed inclusion/exclusion criteria to identify validated and reliable cultural identity/identification instruments for Native Hawaiians, Pacific Islanders, and Filipinos. The inclusion criteria were peer-reviewed articles that reported the psychometric properties of a survey instrument that measures the cultural identity/identification of Native Hawaiians, Pacific Islanders, or Filipinos. The exclusion criteria were: (1) instruments developed for specific racial/ethnic groups other than the 3 race groups; (2) studies that did not report validity test results; and (3) studies tested only with a sample of non-US residents. The authors developed a search strategy with consultation from librarians at the Health Sciences Library, University of Hawai‘i at Mānoa. The search strategy included terms related to survey instrument focus areas, psychometric properties, and target racial groups. The database search did not limit the publication years and study participants’ age.

The literature search was conducted between March 2022 and February 2023. Four databases were extensively searched:

PubMed, PsycINFO, Web of Science, and Health and Psychosocial Instruments. Full descriptions of the search terms are available from the corresponding author by request. All authors determined the eligibility of each article. Differences of opinion were resolved by discussion.

Article Selection

The search yielded 72 records. After excluding 16 duplicated articles, the authors screened the titles and abstracts and selected articles using the inclusion/exclusion criteria. All remaining articles were retrieved, and each full text was reviewed. Ten articles were retrieved for further review from the bibliographies of the reviewed articles. Each author reviewed the purpose of the instruments and the psychometric properties described in 39 articles (29 from databases and 10 from bibliographies). As a result, 16 articles remained. **Figure 1** shows the flow diagram¹⁴ describing the article selection of the current study.

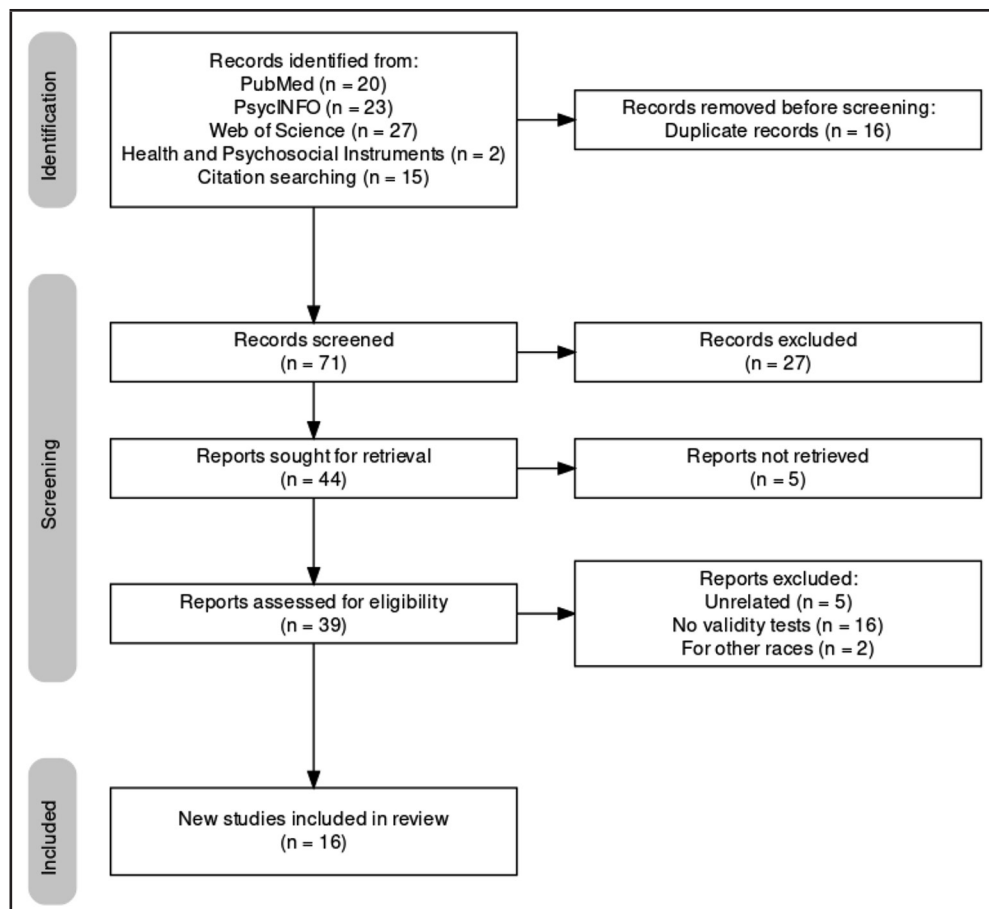


Figure 1. PRISMA 2020 Flow Diagram for a Systematic Review of Survey Instruments to Measure Cultural Identity/Identification for Native Hawaiians, Pacific Islanders, and Filipinos

Studies were selected with the inclusion criteria (peer-reviewed articles reporting the psychometric properties of a survey instrument that measures the cultural identity/identification of Native Hawaiians, Pacific Islanders, or Filipinos) and exclusion criteria (instruments developed for specific racial/ethnic groups other than the 3 race groups; studies that did not report validity test results; studies tested only with a sample of non-US residents). Screened studies were further reviewed except for 5 articles whose full texts were not available.

Review of the Selected Articles

The authors reviewed the names of survey instruments, demographic characteristics of study samples, scoring systems and interpretations of high scores, and the number of factors and items (questions) of the final forms of survey instruments. Next, the articles were reviewed for psychometric properties: types of validity tests (ie, construct validity, concurrent validity, divergent validity), types of reliability tests (ie, internal consistency, stability), results of the validity and reliability tests, and other outcomes (eg, regression analyses using a score as a dependent variable).

If the study conducted a confirmatory factor analysis (CFA) for the construct validity, the authors used the following criteria to determine whether their sample data supported the validity of the survey instrument: (1) root mean square error approximation (RMSEA) was less than 0.08, (2) comparative fit index (CFI)/ Tucker-Lewis index (TLI) was greater than 0.95, or (3) standardized root mean square residual (SRMR) was less than 0.08.¹⁵ If the study reported Cronbach's alpha values, which assess the internal consistency of the survey items, the authors considered a value greater than 0.60 acceptable.¹⁶

Results

Study Descriptions

Table 1 summarizes 16 articles that met the inclusion/exclusion criteria. Most studies examined the validity of a survey instrument for Native Hawaiians, Pacific Islanders, or Filipinos. Some studies evaluated a scale using an ethnically diverse sample. These were included if the items were applicable to the Pacific Indigenous people.

Seven articles reported on survey instruments specifically for Filipinos.¹⁷⁻²¹ Two of them were from dela Cruz et al.^{17,18} Both described the development of a Filipino-American version of SASH, A Short Acculturation Scale for Filipino-Americans (ASASFA). They evaluated the scale using scores from Filipino immigrants in the first study and second-generation Filipinos in the latter study. Guerrero et al¹⁹ used the Filipino Cultural Scale to examine the relationship between Filipino students' cultural identification levels and their delinquent behaviors. This instrument was modeled after the Hawaiian Cultural Scale – Adolescent Version.²² Del Prado and Church developed the Enculturation Scale for Filipino Americans (ESFA).²⁰ Unlike an acculturation scale, an enculturation scale measures the degree of an individual's retention of his/her original culture. The authors expected that first-generation Filipinos would average higher than second-generation Filipinos, who average higher than non-Filipinos. They also anticipated that participants identifying as Filipino would average higher than those identifying as Filipino American. Cotas-Girard et al tested a short version of the Enculturation Scale for Filipino Americans

(ESFA-S).²¹ They reduced the items from 73 to 30 and tested the scale with first- and second-generation Filipinos. Choi et al developed the Familism Scale, which measures the degree of cultural identification in terms of familism. They described it as family-centered over individualist values, a cultural trait of Filipinos and Koreans,^{23,24} and examined the psychometric properties using scores from Filipino and Korean youth and their parents living in the Midwest US.

Three studies reported the psychometric properties of an instrument for Native Hawaiians. Rezentz²⁵ and Streltzer et al²⁶ described the Nā Mea Hawai'i scale, which measures the degree of acculturation of Native Hawaiian culture. The instrument measures acculturation levels in terms of Native Hawaiian language, cultural practice, and values, developed with Native Hawaiian representatives selected by the study. Hishinuma et al developed the Hawaiian Culture Scale—Adolescent Version.²² It measures the degree of Native Hawaiian cultural identification with various aspects, such as activities/social events, folklore/legend, and causes-locations/access. For example, a question of the Causes-Access subscale is "Access rights to the ocean – to gather traditional shells, fish, and seaweed." A participant answers using a 3-point Likert scale (unfamiliar/don't know, you know how to, or you believe in or support). Baumhofer et al used the Pacific Cultural Affinity to measure the degree of cultural affinity/social identity of Samoans and Tongans living in California.²⁷ The study examined the interaction effect between cultural affinity levels and key demographic factors on island food consumption and reported the psychometric properties of the instrument.

The current review found 2 studies reported the development of an instrument for Asian Americans. Since the questions could be used for Filipinos who identify as Asian Americans, these studies were also included. Suinn et al developed the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA), modeled based on ARSMA.²⁸ This scale measures the behavioral aspects of acculturation for Asian Americans. Chung et al developed the Asian American Multidimensional Acculturation Scale (AAMAS).²⁹ The instrument was adapted from SL-ASIA and developed into 3 subscales: each rates items according to a different reference group (their cultural origin, other Asian Americans, and European Americans).

Three studies developed a scale for diverse race groups. Each examined the instrument's psychometric properties using an ethnically diverse sample. The items of the survey instruments can be used for various racial groups, including Native Hawaiians, Pacific Islanders, and Filipinos. Thus, these articles were also included in the final results. Phinney developed the Multigroup Ethnic Identity Measure (MEIM) to measure behaviors and attitudes toward ethnic identity and tested it with data from diverse racial groups.³⁰ Yamada et al described the psychometric properties of the Ethnocultural Identity Behavioral Index.³¹ The instrument focuses more on behavioral aspects than the MEIM,

and can be used with individuals from any ethnocultural group. The study tested the instrument using a sample group including Hawaiians and Filipino residents in Hawai'i. Malcarne et al developed the Scale of Ethnic Experience to measure multiple ethnic-related cognitive constructs across ethnic groups.³² Unlike the other instruments reported here, the scale focuses on cognitive aspects of acculturation, such as perceived discrimination, mainstream comfort, and social affiliation.

All studies used a relatively large sample US residents of both sexes (range of participants: 116 to 2272). Some studies used more than 1 sample group to develop their instrument. Most studies recruited adults, while a few recruited youth or students. The number of factors/subscales of the instrument ranged up to 8. The number of items in the finalized form ranged from 11 to 73. Detailed descriptions of the survey instruments are presented in **Table 1**.

Psychometric Properties of the Survey Instruments

Table 2 presents the psychometric properties of the survey instruments of the 16 articles. All the studies reported results of validity tests. In most studies, construct validity was examined by factor analysis, which determines or confirms the number of factors or subscales in the instrument. The factor analysis type used varied across the studies. Exploratory factor analysis (EFA), principal axis factoring (PAF), or principal component factor analysis (PCA) was used by 9 studies to explore the instrument structure.^{17-20,27-31} Six studies used CFA to confirm the factor loading or improve the instrument structure.^{20,21,23,24,29,32} Two studies used EFA or PAF on a test or long version and CFA on a final or short version and reported both results.^{20,29} The reported CFA results suggested that their finalized instrument's structure reached a satisfactory level (RMSEA <0.08, CFI/TLI >0.95, or SRMR <0.08). The construct validity of the Familism scale was also examined by factorial invariance,^{23,24} which examines whether the pattern of factor loadings on a latent variable remains identical from sample to sample.³³ The study reported configural invariance, indicating that subscales were composed of the same items for most subscales between the Filipino and Korean sample groups.

Most studies examined criterion and/or discriminant validity. A criterion validity test examines whether the score was highly associated with another related information from the survey participants. For example, Del Prado and Church found a correlation between the EFSA scores and Filipino immigrants' age of US entry ($r=0.36$, $P<.01$) and a higher mean score from Filipino immigrants compared to second-generation Filipinos ($P<.01$).²⁰ Confirming a discrepancy between 2 types of people expected to differ could be interpreted as discriminant validity. Hishnuma et al found that Native Hawaiian students scored higher on all Hawaiian ethnic identity items of the Hawaiian Culture Scale – Adolescent version compared to non-Native Hawaiian students ($P<.001$).²²

Divergent validity indicates that the instrument is not too highly correlated with a similar instrument with a different trait. Cotas-Giard et al²¹ compared Filipino participants' scores on ESFA-S with the Rosenberg Self-Esteem Scale³⁴ and the Kaufman Domains of Creativity Scale.³⁵ The correlations with these 2 scales were low, as expected by the authors of the study ($r=-0.037$; $r=0.009$). ESFA-S was also tested for convergent reliability, which examines how closely the instrument is related to an instrument that theoretically should be related. The test results showed that ESFA-S was inversely correlated with the Acculturation Scale for Filipino Americans ($r=-0.62$), which measures the degree of enculturation using reversing scale system.

Most studies reported internal consistency, the reliability test indicating how well the scale measures as intended. The majority of the studies used Cronbach's alpha values on total or subscale items to assess internal consistency, and their reported values reached an acceptable level ($\alpha=.60$). Three studies^{21,29,32} reported the instrument stability by test-retest test: correlations between scores obtained twice over a period from their sample group. These instruments' stability was supported by a correlation coefficient close to 1.

Table 1. Summary of Survey Instruments for Native Hawaiians, Pacific Islanders, and Filipinos to Measure Their Cultural Identity/Identification					
Instrument	Reference	Description of the Study	Study Sample (Size; Age; Gender/Sex ^a ; Ethnicity/ Generation); Location	Instrument Scoring; Interpretation of Higher Scores	Additional Information ^b
A Short Acculturation Scale for Filipino-Americans (ASASFA)	dela Cruz et al (1998) ¹⁷	Examined psychometric properties of a Filipino American version of the Short Acculturation for Hispanics, using first-generation Filipino-Americans.	n=165; 18+ y, mean=58 y; 62% female; 100% Filipino American; California	5-point scale; Higher acculturation levels toward the American culture.	12 items; 3 factors: Use and Preference for a Specific Language (5), Use and Preference for Media Language (3), Ethnic Social Relations (4); Tagalog
A Short Acculturation Scale for Filipino-Americans (ASASFA)	dela Cruz et al (2018) ¹⁸	Examined psychometric properties of the updated version ASASFA, using second-generation Filipino Americans.	n=116; 18-65 y, mean=30 y; 67% female; 100% US-born Filipino American; California	5-point scale; Higher acculturation levels toward the American culture.	11 items; 2 factors: Language Use and Preference (7), Preference for Ethnic Social Relations (4)
Filipino Cultural Scale (FCS)	Guerrero et al (2010) ¹⁹	Examined correlations between delinquent behaviors and potential mediating variables, including the FCS score.	n=150; 9-12th grade students; 62% female; 51% full Filipino, 49% mixed race Filipino; Hawai'i	A total score is the mean of the 7 factors. Subscales are based on item z-scores; Higher enculturation level of Filipino culture.	33 items; 7 factors: Social Orientation (12), Family-Community Orientation (4), Ethnic Affiliation (3), Ethnic Knowledge (5), Filipino Media (3), Cultural Activities (3), Gender Roles (3)
Enculturation Scale for Filipino Americans (ESFA)	Del Prado & Church (2010) ²⁰	Examined psychometric properties of a measure of enculturation of Filipino Americans using 2 sample groups.	[Sample 1] n=281; 18-81 y, Filipino mean=40 y, non-Filipino, mean=34 y; 61% female; 77% Filipino Americans, 24% non-Filipino Americans [Sample 2] n=269; 18-82 y, mean=38 y; 59% female; 100% Filipino Americans; Multiple locations across the US	6-point Likert scale; Higher adherence to Filipino values and behavior/culture.	73 items (long form), 30 items (short form); 3 dimensions (long form/short form): Connection with Homeland (29/10), Interpersonal Norms (29/10), Conservatism (15/10)
Enculturation Scale for Filipino Americans-Short (ESFA-S)	Cotas-Girard et al (2022) ²¹	Examined psychometric properties of a short version of the ESFA, using 2 sample groups.	[Sample 1] n=267; 18-72 y, mean=27 y; 57% female; 40% Filipino American, 17% Filipino, 18% Mixed Filipino [Sample 2] n=368; 18-79 y, mean=37 y; 64% female; 46% Filipino American, 42% Filipino, 7% Mixed Filipino; Multiple locations across the US	6-item Likert-style response scale; Higher enculturation level of Filipino culture.	30 items; 3 factors: Connection With Homeland (10), Interpersonal Norms (10), Conservatism (Traditional and Religious Ideas) (10)
Familism Scales	Choi et al (2018) ²³	Examined the psychometric properties of multiple survey items and scales to assess familism among Asian Americans.	n=338; mean=47 y; mostly females; 44% Filipino (90% foreign-born), 56% Korean (100% foreign-born); Midwest US	5-point Likert scale; Higher emphasis on tradition, respect, caring, centrality, harmony/ sacrifice, and parental expectation.	28 items for the scale of Filipino; 7 subscales: Traditional Manners and Etiquette (4), Respect for Adults (4), Caring for Aging Parents (3), Centrality of the Family Values (4), Centrality of the Family Behaviors (4), Harmony and Sacrifice (5), Parental Expectation of Family Obligation (4); Korean, Tagalog
Familism Scales	Choi et al (2021) ²⁴	Examined the psychometric properties of an updated version of the Familism Scale, using data from Filipino Americans and Korean Americans.	n=680 (343 youth, 337 parents); youth 12-17 y, mean=15 y, parent mean=47 y; 49% female in Filipino youth, 52% female in Korean youth, mostly females in parents; 45% Filipino, 55% Korean; Midwest US	Same as above.	27 items; 5 subscales for Filipino Americans: Traditional Manners and Etiquette (5), Respect for Adults (4), Caring for Aging Parents and Harmony and Sacrifice (10), Centrality of the Family (4), Parental Expectation of Family Obligation (4); Korean, Tagalog

Table 1. Summary of Survey Instruments for Native Hawaiians, Pacific Islanders, and Filipinos to Measure Their Cultural Identity/Identification (Continued)

Instrument	Reference	Description of the Study	Study Sample (Size; Age; Gender/Sex ^a ; Ethnicity/ Generation); Location	Instrument Scoring; Interpretation of Higher Scores	Additional Information ^b
Nā Mea Hawai'i Scale	Rezentez (1993) ²⁵	Developed an acculturation scale for Native Hawaiians through item development and survey administration.	n=150; 18–86 y; 50% female; 33% Hawaiian, 33% Caucasian, 33% Japanese; Hawai'i	"Yes/No/Don't know" or "Fill in the blank": 1 point for each item if the response is the same as the reference; Higher Hawaiian acculturation level.	21 items about language, cultural practice, and values.
Nā Mea Hawai'i Scale	Streltzer et al (1996) ²⁶	Examined the validity of Nā Mea Hawai'i Scale and associations with psychosocial characteristics.	n=264; 12–84 y, mean=45 y; 67% female; 65% Hawaiian, 35% part Hawaiian; Hawai'i	Same as above.	Same as above.
Hawaiian Culture Scale—Adolescent Version	Hishinuma et al (2000) ²²	Examined the psychometric properties of a measure of the degree to which adolescents know of, believe in, value, and practice elements of traditional Hawaiian culture.	n=2272; 14–17 y; 54% female; 66% Hawaiian, 34% Non-Hawaiian; Hawai'i	5 or 3-point Likert scale; Higher Hawaiian cultural identification level.	50 items; 7 factors: Native Hawaiian Culture & Ethnicity (11), Customs & Beliefs (11), Lifestyles (8), Activities/Social Events (10), Folklore/Legend (5), Causes-Locations (3), Causes-Access (2)
Pacific Cultural Affinity	Baumhofer et al (2021) ²⁷	Examined the psychometric properties of a measure of the cultural affinity of Pacific Islanders and the effect of cultural affinity on island food consumption.	n=240; ≥18 y, mean=40 y; 50% female; 100% Samoan or Tongan; California	4-point Likert scale (reverse-coded for analysis); Lower Pacific Island cultural affinity level.	11 items; 2 factors: Cultural Affinity Activity (7), Cultural Affinity Media (3)
Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA)	Suinn et al (1992) ²⁸	Examined the psychometric properties of the scale.	n=284; mean=24 y; female % not reported; 100% Asian Americans, 73% 1st generation; Colorado	5-point Likert scale; Higher acculturation (or higher Western Identity) level.	21 items; 5 factors: Language (4), Identity (4), Friendship (4), Behaviors (5), Generation/Geographic Background (3), Attitudes (1)
Asian American Multidimensional Acculturation Scale (AAMAS)	Gim Chung et al (2004) ²⁹	Developed 3 versions of Asian American Multidimensional Acculturation Scale (AAMAS): culture origin (AAMAS-CO), Asian American (AAMAS-AA), and European American (AAMAS-EA). Examined the psychometric properties of the developed scale.	[Study 1] n=342; 17–31 y, mean=21 y; 65% female; 28% Chinese, 27% Korean, 14% Japanese, 12% Filipino, 11% Vietnamese, 57% 1st generation [Study 2] n=138; 18–35 y, mean=21 y; 70% female; 30% Chinese, 23% Korean, 12% Mixed Asian, 9% Filipino, 34% 1st generation [Study 3] n=44; 21–32 y, mean=27 y; 43% female; 100% Korean, 50% 1st generation; West Coast US	6-point Likert scale; Higher acculturation level.	15 items; 3 subscales: Cultural Behavior (10), Cultural Identity (3), Cultural Knowledge (2)
Multigroup Ethnic Identity Measure (MEIM)	Phinney (1992) ³⁰	Examined the psychometric properties of a measure of ethnic identity based on elements of ethnic identity that are common across groups and the relationship of ethnic identity to demographic characteristics of self-esteem.	[Sample 1] n=417; 14–19 y, mean=17 y; 65% female; 32% Asian American, 31% Black, 21% Hispanic, 10% Mixed [Sample 2] n=136; 18–34 y mean=20 y; 65% female; 26% Asian American, 8% Black, 43% Hispanic, 6% Mixed, 17% White; location not specified	4-point Likert scale, scores are calculated by reversing negative items, summing all items, and obtaining the mean; Higher ethnic identity level.	14 items; Affirmation and Belonging (5), Ethnic Identity Achievement (7), Ethnic Behaviors (2)

Table 1. Summary of Survey Instruments for Native Hawaiians, Pacific Islanders, and Filipinos to Measure Their Cultural Identity/Identification (Continued)

Instrument	Reference	Description of the Study	Study Sample (Size; Age; Gender/Sex ^a ; Ethnicity/ Generation); Location	Instrument Scoring; Interpretation of Higher Scores	Additional Information ^b
Ethnocultural Identity Behavioral Index (EIBI)	Yamada et al (1998) ³¹	Examined the psychometric properties of the scale of ethnocultural behavior with potential utility.	n=352; 17–47 y, mean=22 y; 63% female; 14% Chinese, 11% Filipino, 34% Japanese, 12% Part Hawaiian; Hawai'i	7-point Likert scale, select 1 ethnocultural group and rate the identification level; Higher ethnocultural identity level.	19 items; 3 factors: Cultural Activities, Social Interaction, Language Opportunities
Scale of Ethnic Experience	Malcarne et al (2006) ³²	Examined the psychometric properties of a multidimensional measure of ethnic-related cognitive constructs that can be used across American ethnic groups.	[Group 1] n=638; 18–72 y, mean=20 y; 60% female; 13% Black, 44% White, 15% Filipino, 28% Hispanic [Group 2] n=1727; 18–79 y, mean=19 y; 66% female; 12% Black, 52% White, 14% Filipino, 22% Hispanic; California	5-point Likert scale; Higher adherence to ethnic identity and beliefs.	32 items; 4 factors: Ethnic Identity (12), Perceived Discrimination (9), Mainstream Comfort (6), Social Affiliation (5)

^a The term Gender/Sex is used because some studies measured gender.

^b Additional Information includes the number of items finalized in the study, the number of factors/subscales, names of factors/subscales, the number of items included in each factor/subscale, and non-English languages used in the survey instrument, if any.

Table 2. Psychometric Properties of the Survey Instruments Identified by the Systematic Review

Instrument (Authors, Year)	Validity Tests	Reliability Tests	Psychometric Properties
A Short Acculturation Scale for Filipino–Americans (dela Cruz et al, 1998) ¹⁷	Construct (PCA) Concurrent/Convergent (mean scores by demographic characteristics) Criterion/Discriminant (mean scores by ethnic identification groups; multi-variable regression)	Internal consistency (Cronbach's α , correlation with Tagalog version)	<ul style="list-style-type: none"> • Construct: PCA identified 3 factors, accounting for 61% of the total variation for English and Tagalog versions. The study of the scale for Hispanics also reported 3 factors. • Concurrent/Convergent: No difference between males and females. • Criterion/Discriminant: Those self-identified as "fifty-fifty Filipino/American" had the highest mean, followed by those self-identified as "Filipino more than American". Those self-identified as "very Filipino" had the lowest mean. Ethnic identification contributed the most to the variances (53% English version, 48% Tagalog version). • Internal consistency: total ($\alpha=.85$; $r=0.85$), subscales ($r=0.74-0.77$)
A Short Acculturation Scale for Filipino–Americans (dela Cruz et al, 2018) ¹⁸	Construct (EFA, parallel analysis) Criterion/Discriminant (Ordinary least squares regression)	Internal consistency (Cronbach's α)	<ul style="list-style-type: none"> • Construct: EFA identified 2 factors; Language Use and Preference (FL=0.42–0.89), Social Ethnic Relations (FL=0.60–0.90); parallel analysis with 1000 re-sampling supported the factor structure. • Criterion/Discriminant: Gender and ethnic self-identification were predictors of Language Use and Preference subscale score ($P<.01$); Ethnic self-identification was a predictor of Social Ethnic Relations subscale scores ($P<.01$) • Internal consistency: total ($\alpha=.82$), subscales ($\alpha=.81-0.86$)
Filipino Cultural Scale (Guerrero, 2010) ¹⁹	Construct (EFA, inter-factor correlation)	Internal consistency (Cronbach's α)	<ul style="list-style-type: none"> • Construct: EFA identified 7 factors; Social Orientation (FL=0.30–0.66), Family–Community Orientation (FL=0.32–0.62), Ethnic Affiliation (FL=0.35–0.97), Ethnic Knowledge (FL=0.35–0.75), Filipino Media (FL=0.56–0.89), Cultural Activities (FL=0.52–0.60), Gender Roles (FL=0.38–0.91). Inter-factor correlation ($r=-0.28-0.42$) • Internal consistency: subscales ($\alpha=.57-.77$)
Enculturation Scale for Filipino Americans (ESFA) (Del Prado & Church, 2010) ²⁰	Concurrent (correlation with theoretically related scales; correlation between long and short forms) Criterion/Discriminant (difference between 1st and 2nd generations; correlation with characteristics) Construct (PAF to full form, CFA to short form)	Internal consistency (Cronbach's α)	<ul style="list-style-type: none"> • Concurrent: ESFA total score and Asian Values Scale-reversed ($r=0.56$); ESFA Connection and Homeland and AAMAS Culture of Origin subscale ($r=0.77$); Short form with the corresponding subscales of long form ($r=0.91-0.97$) • Criterion/Discriminant: Difference between 1st and 2nd generations in total scores ($P<.01$) and each subscale ($P<.01$); Immigration age ($r=0.36$), years in US ($r=-0.35$), years of US schooling ($r=-0.40$) • Construct: PAF identified 3 dimensions; CFA supported 3 factors (CFI =0.86, RMSEA=0.04) • Internal consistency: long form total ($\alpha=.89$), subscales ($\alpha=.83-0.95$); short form: total ($\alpha=.86$), subscales ($\alpha=.79-.89$)

Table 2. Psychometric Properties of the Survey Instruments Identified by the Systematic Review (Continued)			
Instrument (Authors, Year)	Validity Tests	Reliability Tests	Psychometric Properties
Enculturation Scale for Filipino Americans-Short (Cotas-Giard et al, 2022) ²¹	Divergent (correlation with a dissimilar scale); Convergent (correlation with another scale for Filipino); Criterion/Discriminant (correlation and ANOVA with demographic variables); Construct (CFA)	Internal consistency (Cronbach's α) Stability (test-retest)	<ul style="list-style-type: none"> Divergent: The Rosenberg Self-Esteem Scale ($r=-0.037$); the Kaufman Domains of Creativity Scale ($r=0.009$). Convergent: with the Acculturation Rating Scale for Filipino Americans ($r=-0.62$) Criterion/Discriminant: Number of years in US ($r=-0.31$) and amount of schooling ($r=-0.49$), generation ($P<.001$), ethnic identity ($P<.001$) Construct: CFA supported the 3-factor structure (CFI=0.83, TLI=0.82, RMSEA=0.06). Internal consistency: Study1, total scores ($\alpha=.76$), subscales ($\alpha=.72-.79$); Study2, total scores ($\alpha=.79$), subscales ($\alpha=.75-.86$) Stability ($r=0.96$)
Familism Scales (Choi et al, 2018) ²³	Content (mean scores by ethnic group) Construct (CFA, factor intercorrelations, FI between Filipino and Korean samples)	Internal consistency (Cronbach's α , item-total correlation)	<ul style="list-style-type: none"> Internal consistency: initial scale ($\alpha=.63-.80$; $r=0.32-0.83$)^a Content: Filipino American parents had higher scores than Korean parents ($P<.05$) except for Traditional Manners and Etiquettes. Construct: CFA supported 7 factors from 28 out of 34 items. Reducing items improved the model fit statistics (CFI=0.885, RMSEA =0.08). Intercorrelation of 7 subscales ($r=0.16-0.54$). FI found configural invariance for 4 subscales and metric invariance (invariant in FL) for 3 subscales. Traditional Manners and Etiquette did not attain metric invariance.^a
Familism Scales (Choi et al, 2021) ²⁴	Content (mean scores by ethnic group) Construct (CFA, factor intercorrelations, FI between Filipino and Korean samples) Discriminant (correlation between Filipino and Korean samples) Criterion (correlation with acculturation variables and youth outcomes)	Internal consistency (Cronbach's α , item-total correlation)	<ul style="list-style-type: none"> Internal consistency: initial scale with 6 subscales ($\alpha=.66-.83$; $r=0.30-0.77$)^a Content: Filipino American parents had higher scores than Korean parents ($P<.05$) except for Traditional Manners and Etiquette. Construct: CFA supported 5 factors from the initial scale: Caring for Aging Parents and Harmony and Sacrifices were highly correlated. Combining the 2 factors improved model fit statistics (CFI=0.89, RMSEA=0.06). Intercorrelation among 5 factors ($r=0.15-0.60$). FI found configural invariance for 3 subscales. Parental Expectation of Family Obligation attained metric, strong (similar item intercepts), and strict invariance (similar error variances).^a Discriminant: the scales for Filipino and Korean were positively correlated with a few exceptions. Criterion: ethnic identity and 5 subscale ($r=0.18-0.49$), heritage cultural practices ($r=0.22-0.56$)^a
Nā Mea Hawai'i Scale (Rezentez, 1993) ²⁵	Criterion/Discriminant (item analyses to identify items best differentiated the Hawaiian sample from non-Hawaiian samples)	Internal consistency (item-total correlation)	<ul style="list-style-type: none"> Criterion/Discriminant: Of 34 items, 21 items differentiated the Hawaiian from Caucasian and Japanese subjects. These items were retained as the final scale. Internal consistency: item-total $r=0.41-0.76$
Nā Mea Hawai'i Scale (Streltzer et al, 1996) ²⁶	Criterion/Discriminant (t-test on scores between Hawaiians and non-Hawaiians; t-test and correlation between high/low blood quantum groups among Hawaiians)		<ul style="list-style-type: none"> Criterion/Discriminant: Hawaiians had higher scores than non-Hawaiians ($P<.001$); correlation with blood quantum ($r=0.31$); the high blood quantum group had a higher score than the low blood quantum group ($P=.002$).
Hawaiian Culture Scale – Adolescent Version (Hishinuma et al, 2000) ²²	Discriminant (factor intercorrelations, t-test/ANOVA on scores for Hawaiians vs Non-Hawaiians) Criterion (correlation with Hawaiian cultural variables)	Internal consistency (Cronbach's α)	<ul style="list-style-type: none"> Discriminant: Intercorrelation among 7 subscales (Hawaiians $r=0.19-0.58$; non-Hawaiians $r=0.19-0.57$). The patterns of correlation between the 2 groups were similar. Hawaiians scored higher on all Hawaiian ethnic identity items ($P<.001$). Criterion: Positive correlation with the Hawaiian cultural variables ($r>0.46$). Internal consistency: Hawaiians ($\alpha=.82-.96$) non-Hawaiians ($\alpha=.76-.96$)
Pacific Cultural Affinity Scale, (Baumhofer et al, 2021) ²⁷	Construct (EFA, factor intercorrelations)	Internal consistency (Cronbach's α , item-total correlation)	<ul style="list-style-type: none"> Construct: EFA identified 2 factors ($r=0.51$) Internal consistency: total scores ($\alpha=.85$, $r=0.06-0.66$), subscales ($\alpha=.71-.85$)
Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA) (Suinn et al, 1992) ²⁸	Construct (PCA) Criterion/Discriminant (mean scores between European Americans and Asian Americans) Concurrent (score and demographic characteristics)	Internal consistency (Cronbach's α)	<ul style="list-style-type: none"> Construct: PCA identified 5 factors from 17 items Criterion/Discriminant: English vs Asian language as a first language ($P<.001$) Concurrent: total years attending school in the US ($r=0.61$), age upon attending school in the US ($r=-0.61$), age upon arriving in the US ($r=-0.49$), years lived in a non-Asian neighborhood ($r=0.41$), self-rating acculturation ($r=0.62$) (all $P<.001$) Internal consistency: total scores ($\alpha=.91$)

Table 2. Psychometric Properties of the Survey Instruments Identified by the Systematic Review (Continued)			
Instrument (Authors, Year)	Validity Tests	Reliability Tests	Psychometric Properties
Asian American Multidimensional Acculturation Scale (AAMAS) (Gim Chung et al, 2004) ²⁹	Construct (EFA, CFA) Criterion/Discriminant (correlation with generation) Concurrent (correlation with SL-ASIA, Cultural Identification Scale (CIS), Asian Value Scale (AVS) Divergent (correlation with a dissimilar scale)	Internal consistency (Cronbach's alpha) Stability (test-retest)	<ul style="list-style-type: none"> • Construct: CFA supported the 4 factors identified by EFA. The 4 factors represent Cultural Identity, Language, Cultural knowledge, and Food consumption (CFI=>0.95 for all scales). • Criterion/Discriminant: generation in AAMAS-Culture of Origin (CO) (r=-0.36) • Concurrent: correlations of AAMAS-CO, AAMAS-Asian American (AA), AAMAS-European American (EA) with SL-ASIA (r=-0.75, -0.31, 0.32), CIS-original (r=0.51, 0.26, NS), CIS-Anglo (r=-0.30, NS, 0.49), and AVS (r=0.37, 0.18, -0.25) • Divergent: correlation with Rosenberg's Self-esteem Scale (CO r=0.10; AA r=0.03; EA r=0.17) • Internal consistency: AAMAS-CO, -AA, -EA (α=0.87, 0.78, 0.81) • Stability: r≥0.75
Multigroup Ethnic Identity Measure (MEIM) (Phinney, 1992) ³⁰	Construct (PAF) Criterion/Discriminant (Differences by demographic characteristics, correlation with self-esteem)	Internal consistency (Cronbach's α, Item-Reminder Correlation)	<ul style="list-style-type: none"> • Construct: PAF suggested 2 factors from 20 items, accounting for 30.8% and 11.4% of the variance. • Criterion/Discriminant: White scored lower than Asian, Black, and Hispanic on the ethnic identity subscale (P<.05 for all). Self-esteem and Ethnic Identity for high school students (r =0.31) and college students (r=0.25). • Internal consistency: total (α=.81, .90), subscales (α=.69, .86), item-reminder among Ethnic Identity Achievement (r=-0.17-0.52, r=0.03-0.79) for the 2 samples.
Ethnocultural Identity Behavioral Index (EIBI) (Yamada et al, 1998) ³¹	Construct (PCA. Inter-correlations of the factors identified) Criterion/Discriminant (t-test between US-born and not US-born individuals, ANOVA across ethnocultural groups)	Internal consistency (Cronbach's alpha, correlation among the Total score, 3 factors, and the main variables)	<ul style="list-style-type: none"> • Construct: PCA identified 3 factors, accounting for 60% of the variances. • Criterion/Discriminant: US-born individuals had lower scores (P<.001); total scores and 3 subscales' scores were different across the ethnocultural groups (P<.01). • Internal consistency: total scores (α=.90), each factor (α=.83-.88); total score and each factor (r=0.77-0.89); among factors (r=0.45-0.80); total score and strength of identity (r=0.31); total score and cultural pride (r=0.48)
Scale of Ethnic Experience (Malcarne et al, 2006) ³²	Construct (CFA, factor intercorrelations) Criterion (multivariate analysis of factor mean scores) Concurrent (correlation with MEIM subscale)	Internal consistency (Cronbach's α) Stability (test-retest)	<ul style="list-style-type: none"> • Construct: CFA supported 4 factors from 32 out of 73 items (factor loadings=0.41-0.84, CFI=0.87, RMSEA =0.058, SRMR = 0.07). Intercorrelation of 4 factors (r=0.20-0.56). • Criterion: Significant main effect of factor mean score for ethnicity and gender (P<.001 for both). • Concurrent: MEIM Ethnic Identity Achievement (r=0.72) • Internal consistency: subscales (α=.76-.91) • Stability: total scores (r=0.77-0.86), Ethnic Identity (r=0.70-0.86), Mainstream Comfort (r=0.69-0.82), Perceived Discrimination (r=0.46-0.82), Social Affiliation (r=0.59-0.82)

Abbreviations: CFA = confirmatory factor analysis; EFA = exploratory factor analysis; FI = factorial invariance; FL = factor loadings, PCA = principal components factor analysis; PAF = principal-axis factor analysis.

^a Results of analysis with data from Filipino Americans.

Discussion

The current systematic review study identified 16 articles that reported psychometric properties of survey instruments of cultural identity/identification with Native Hawaiian, Pacific Islander, or Filipino cultures. Some studies focused on enculturation, such as the Enculturation Scale for Filipino Americans.²⁰ On the other hand, the instruments developed by Dela Cruz et al^{17,18} and Rezentez²⁵ focused on acculturation.¹⁷ Cotas-Girard et al described the differences between the 2 terms:

“Enculturation is defined as the degree to which immigrants and later generations maintain and adhere to the norms of their Indigenous culture (such as the Philippines), while acculturation is the degree to which these individuals take on and become immersed in a host culture, such as the United States.”²¹

The differences in the conceptualization of cultural identification reflect the scale design of the instrument. A higher score on an acculturation instrument indicates being immersed in a host culture (Westernized culture). In comparison, a higher score on an enculturation instrument indicates adhering to the norm of their Indigenous culture. Researchers need to be aware of the scoring system to ensure that the instrument of interest fits their study’s research questions. Another finding was that some studies updated their instruments over time, suggesting that updating an instrument after reevaluating it is necessary to maintain its psychometric properties.

Some studies reported the associations between the instrument score and individuals’ characteristics to support the instrument’s validity. For example, Phinney examined the association between the scale score and self-esteem.³⁰ Baumhofer et al examined the interaction effect of cultural affinity (instrument score) and key demographic characteristics on island food consumption.²⁷ Their approaches are exemplified for future studies. For example, the degree of acculturation or enculturation could be a primary dependent variable to examine the association with attitude or behaviors. One may want to use the degree of acculturation or enculturation as a potential confounder when examining an association between a factor of interest and a health outcome. A survey instrument can be administered in a clinical trial study. Bender et al described their protocol for a weight loss intervention randomized controlled trial for Filipino Americans with type 2 diabetes.³⁶ They reported the study plan of using ASFA to measure the acculturation levels of study participants.

There are several limitations that must be acknowledged. First, the current study used multiple databases to search articles but did not use all available databases. Thus, there might be some instruments not identified. Second, the findings of this study are limited to the inclusion/exclusion criteria set by the research team. For example, the search terms used did not encompass all specific ethnic groups within the Pacific Islanders, such as Samoans, Tongans, and Micronesians. The search might have

missed survey instruments developed for such groups. On the other hand, the results included studies that tested an instrument even though they were not exclusively used for Native Hawaiians, Pacific Islanders, or Filipinos. For example, the studies for SL-AISA and MEIM tested using samples of non-specific Asian American races.^{28,30} The AAMAS, EIBI, and the Scale of Ethnic Experience were evaluated with a study sample that did not include many Pacific indigenous people.^{29,31,32} However, these studies were included based on the instruments’ content. Further evaluation of these instruments is needed if they are to be used with Native Hawaiian, Pacific Islander, or Filipino participants. Third, despite using multiple terms in the search, some instruments not described using the terms might not be captured. A further systematic review can address these limitations. However, this systematic review was conducted with the current major databases and no limitations in publication date. Moreover, the assessment criteria for validity tests helped our literature search capture high-quality survey instruments. The project team will continue to inventory survey instruments for Native Hawaiians, Pacific Islanders, and Filipinos and plans to post information about instruments, including those that did not meet the inclusion/exclusion criteria, in the project’s online repository.

Recommendations for the Use of an Instrument Measuring Cultural Identity/Identification

It is important to investigate whether the instrument of interest has been updated before implementing it. Next, conducting a pilot study to test the instrument of interest is essential to ensure that all of the items are appropriate for the target group. For example, an instrument focusing on behavioral aspects developed a while ago may contain items that do not fit current lifestyles. Testing the instrument will allow item modification before launching the study. Lastly, researchers can benefit from performing validity and reliability tests using their sample data to ensure their research outcomes will be valid. Reporting study outcomes with the results of tests for validity (eg, RMSEA or CFI/TLI from CFA) and reliability (eg, Cronbach’s alpha) will support the quality of the research. When researchers use an instrument that has not been fully investigated for validity and reliability, they can evaluate it with their study sample.

Conclusions

In conclusion, this systematic review found 16 articles reporting reliable and valid survey instruments to measure the cultural identity/identification of Native Hawaiians, Pacific Islanders, and Filipinos. These instruments may be useful for studying the relationship between the degree of their cultural identity/identification and health status, one of the current perspectives on public health. This study may help those who need to find a survey instrument to measure the degree of cultural identity/identification.

Conflict of Interest

None of the authors identify a conflict of interest.

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