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Profiles of Ethnic-Racial Identity, Socialization, and Model Minority Experiences: Associations with Well-Being Among Asian American Adolescents

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Abstract

Ethnic-racial identity, ethnic-racial socialization, and racialized experiences are fundamental to the development of youth of color. However, most prior studies have examined their developmental impact in isolation. The present study fills this gap using a person-centered approach to elucidate patterns of ethnic-racial identity, socialization, and model minority experiences among 145 Asian American adolescents (M_{age} = 14.3, SD = 0.59; 65% female). Three distinct profiles were identified. Overall, adolescents with stronger ethnic-racial identity and more cultural socialization but less preparation for bias (*Salient*, 13%) demonstrated better psychosocial and academic outcomes. Adolescents with moderate levels on the six indicators of ethnic-racial identity, socialization, and model minority experiences (*Moderate*, 72%) reported better sleep quality and less delinquency. Adolescents with low levels of ethnic-racial identity and cultural socialization but greater preparation for bias (*Marginal*, 15%) had the least adaptative outcomes across all domains. The findings observed the heterogeneity of ethnic-racial experiences within the Asian American group and highlighted the importance of examining the combined influences of ethnic-racial identity, socialization, and model minority experiences on health and well-being among Asian American adolescents from a multidimensional perspective.

Keywords

Ethnic-racial identity; Socialization; The model minority myth; Asian American adolescents

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Authors' Contributions M.X. reviewed the literature, performed the statistical analyses, and drafted the manuscript; J.F. helped to draft the review of literature and part of discussion; P.S.I. conducted literature searches and helped to present the results; M.H. helped to draft the method section; T.Y. designed and supervised the original data collection and helped to draft the manuscript. All authors read and approved the final manuscript.

Conflict of Interest The authors declare no competing interest.

Ethical Approval The study procedures were approved by Fordham University Institutional Review Board. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants (parents) included in the study. Informal assent was obtained from adolescents.

Introduction

Ethnic-racial identity, ethnic-racial socialization, and racialized experiences become increasingly salient during adolescence due to increasing cognitive skills and encounters with race-based stereotypes and discrimination in school contexts (Hughes et al., 2016). Given the distinct socio-historical contexts of ethnic-racial groups in the United States (Kiang et al., 2016), ethnic-racial knowledge and experiences vary substantially across different groups (Rivas-Drake et al., 2014). The integrative models for youth of color emphasize the contributing roles of ethnic-racial experiences and stratification factors (e.g., stereotypes) in shaping adolescents' developmental competencies (Garcia-Coll et al., 1996; Mistry et al., 2016). Although the fundamental roles of ethnic-racial identity and socialization in Asian American youth development have been documented (Atkin et al., 2019; Juang et al., 2016), most prior empirical studies investigated the effects of these constructs in isolation, and their joint implication for adolescent development is less clear. Grounded in the developmental perspectives for youth of color (Garcia-Coll et al., 1996; Mistry et al., 2016), this study fills the research gap by: (1) identifying unique and distinct profiles of ethnic-racial identity, socialization, and model minority experiences among Asian American adolescents; and (2) examining the associations between the profiles and adolescents' developmental competencies.

Ethnic-Racial Identity and Asian American Youth Development

Defined as individuals' understanding of and attitudes toward their ethnic-racial group membership, *ethnic-racial identity* is an essential and normative developmental process among adolescents of color (Umaña-Taylor et al., 2014). Ethnic-racial identity comprises dimensions that capture the developmental process and evaluative content (Umaña-Taylor et al., 2014). The developmental processes of ethnic-racial identity are grounded in Marcia's (1980) formulations and operationalized by Erikson's (1968) theory of ego identity formation, which consists of two well-established dimensions: *exploration* (i.e., the active search to understand the role of race and ethnicity on overall identity) and *commitment* (i.e., clarity about race and ethnicity in one's self-concept; Phinney, 1990). Alternatively, the evaluative component of ethnic-racial identity has theoretical foundations in social identity and self-categorization (Tajfel & Turner, 1986; Turner et al., 1987). These social psychological approaches capture identity content, attitudes, and awareness of how the self is situated in relation to other groups, including *private regard* (i.e., positive evaluations of one's ethnic-racial group) and *centrality* (i.e., the extent to which ethnicity/race is an important aspect of self; Sellers et al., 1998).

Over the past twenty years, ethnic-racial identity has been linked to adaptative outcomes in psychosocial, academic, and health domains (Rivas-Drake et al., 2014; Smith & Silva, 2011), highlighting promotive and protective effects among youth of color. Besides direct associations, ethnic-racial identity may also buffer the pernicious impact of discrimination on adjustment outcomes. A recent meta-analysis of 51 studies with 18,545 participants corroborated the interaction effects between discrimination and ethnic-racial identity, demonstrating small but significant attenuating impact of ethnic-racial identity on discrimination and developmental outcomes, such as academic and cognitive abilities

(effect size $r = 0.03$) and physical health ($r = 0.10$; Yip Wang et al., 2019). However, the same study also evidenced significant variability by ethnic-racial identity dimensions and across ethnic-racial groups. For example, higher levels of identity commitment attenuated the effects of discrimination on overall adjustment ($r = 0.05$); in contrast, higher levels of identity exploration were associated with more mental health vulnerabilities ($r = -0.08$). When evaluating specific content dimensions of ethnic-racial identity, the moderating effects of private regard were only observed after accounting for ethnic-racial differences (i.e., private regard conferred stronger buffering effects for samples with more Asian Americans, compared with samples with African Americans), while the moderating impact of centrality was not observed in the same study (Yip et al., 2019).

Research focusing on Asian American youth is more limited relative to other ethnic-racial groups (Rivas-Drake et al., 2014). Available research observes an overall protective effect of identity commitment for Asian Americans (Yip et al., 2019) and a positive association with self-esteem (Stein et al., 2014). Findings related to identity exploration among Asian American youth remain more equivocal, depending on specific domains of outcomes (Rivas-Drake et al., 2014). While some studies reported positive associations between exploration and academic (e.g., school performances and connectedness; Kiang et al., 2012) and psychosocial (e.g., self-esteem; Stein et al., 2014) outcomes, one study observed detrimental effects on Asian American adolescents' behavioral outcomes (e.g., more engagement in delinquency; Go & Le, 2005). For the content dimensions of ethnic-racial identity, centrality and private regard were positively associated with self-esteem of Asian American adolescents (Gartner & Kiang, 2014).

Ethnic-Racial Socialization and Asian American Adolescents' Well-Being

Another important cultural resource for youth of color is *ethnic-racial socialization*, defined as the communication of values, perspectives, and information about ethnic-racial group membership and cross-ethnic relationships (Hughes et al., 2016). Ethnic-racial socialization practices include *cultural socialization* (i.e., messages about cultural history and heritage), *preparation for bias* (i.e., promoting awareness of, and coping with racism and discrimination), *promotion of mistrust* (i.e., encouraging cautions and suspect in cross-ethnic relations), and *egalitarianism* (i.e., emphasis of diversity and equality among ethnic-racial groups; Hughes et al., 2016). Cultural socialization has been linked to positive outcomes during childhood and adolescence, including stronger self-esteem ($r = 0.13$) and lower levels of externalizing behaviors ($r = -0.06$; see Wang et al., 2020 for a meta-analysis). However, findings on associations with preparation for bias are mixed, and both positive and negative effects were found (see Umaña-Taylor & Hill, 2020 for a review). Whereas preparation for bias was associated with better interpersonal relationships ($r = 0.04$), it was also related to higher levels of internalizing and externalizing behaviors (rs = 0.05 and 0.06; Wang et al., 2020). For promotion of mistrust, most empirical studies have documented its pernicious impact on youth adjustment (Umaña-Taylor & Hill, 2020); specifically, it was associated with higher levels of internalizing problems ($r = 0.19$; Wang et al., 2020). Egalitarianism is the least studied socialization practice, with only 6% of the 259 articles focusing on ethnic-racial socialization published in the last decade examining this construct, compared to cultural socialization (91%), preparation for bias (36%), and promotion of mistrust

(12%; Umaña-Taylor & Hill, 2020). The impact of egalitarianism on youth development is less clear, and the same meta-analysis did not observe significant associations between egalitarianism and psychosocial outcomes across studies (Wang et al., 2020).

Asian Americans are similarly underrepresented in ethnic-racial socialization research (Juang et al., 2016). Among the 102 studies included in a meta-analysis of ethnic-racial socialization and developmental outcomes (Wang et al., 2020), only 7% investigated Asian American populations, compared to 63% and 21% focusing on African American and Latinx groups, respectively. The present study focuses specifically on cultural socialization and preparation for bias, the two commonly studied socialization practices (Umaña-Taylor & Hill, 2020). Relative to other groups, Asian American families are more likely to emphasize cultural socialization (e.g., passing on cultural heritage) and engage less in preparation for bias (Juang et al., 2016). Cultural socialization is protective for Asian American youth, buffering the detrimental impact of discrimination on psychological well-being (Atkin et al., 2019), and associated with higher levels of self-esteem (Gartner & Kiang, 2014) and more school engagement (Seol et al., 2016). Findings on preparation for bias are less consistent; although it mitigated the effects of discrimination (Alvarez et al., 2006), it was also associated with lower levels of self-esteem (Wang et al., 2020) and more depressive symptoms (Liu & Lau, 2013).

Ethnic-Racial Identity, Socialization, and Model Minority Experiences Among Asian American Youth

Although the independent effects of ethnic-racial identity and socialization on Asian American youth have been documented (Atkin et al., 2019; Rivas-Drake et al., 2014), their combined associations with Asian American youth development is less clear. Socialization and identity are mutually defining and interconnected components of ethnic-racial knowledge and experiences (Hughes et al., 2016). Indeed, a meta-analysis of 68 studies indicated a strong, positive correlation between ethnic-racial identity and socialization across ethnic-racial groups ($r = 0.18$), with ethnic-racial socialization showing a positive association with ethnic-racial identity subdimensions of exploration, commitment, private regard, and centrality (rs = 0.15 to 0.34; Huguley et al., 2019). Research investigating ethnic-racial socialization and identity among Asian Americans also observes consistent links between socialization and identity commitment, private regard, and centrality both concurrently (Daga & Raval, 2018; Woo et al., 2020) and longitudinally (Gartner & Kiang, 2014; Kiang et al., 2019). The links between ethnic-racial identity and socialization highlight the need to further examine their joint influences on Asian American youth outcomes.

The unique ethnic-racial experiences of Asian American adolescents as the model minority also contribute to their development (Mistry et al., 2016; Yip et al., 2021). The model minority myth suggests that by virtue of being Asian, Asian Americans are guaranteed to be successful academically and economically. Despite considerable ethnic and socioeconomic differences within the Asian pan-ethnic group (Yoo et al., 2010), the model minority myth serves to homogenize Asian American youth. Whereas some work observes the benefits of being stereotyped as the model minority for academic (Kiang et al., 2016; Yoo et al.,

2015) and behavioral (Tan, 2018) outcomes, research highlights the psychological (Atkin et al., 2018), academic (Cheryan & Bodenhausen, 2000), and behavioral (Ong et al., 2017) health challenges and vulnerabilities of Asian American youth who contend with the model minority stereotypes.

Ethnic-racial identity, ethnic-racial socialization, and racialized experiences are conceptually interconnected (Hughes et al., 2016). The interpretive processes underlying ethnic-racial identification, socialization of cultural practices, and interpretations of social stratification contexts (e.g., model minority stereotypes) are integrally implicated in Asian American children and youth's development (Mistry et al., 2016). Empirical findings also evidence these interconnections, such that internalization of the model minority myth is positively associated with cultural socialization (Daga & Raval, 2018) and has concurrent and subsequent effects on identity commitment and exploration among Asian American adolescents (Thompson et al., 2016).

Further, model minority experiences are widely shared among Asian Americans (Chao et al., 2013) and become part of their ethnic-racial socialization processes (Daga & Raval, 2018). However, the relationships between socialization and model minority experiences demonstrate heterogeneity within the Asian American group. Specifically, a recent study investigating profiles of socialization, model minority stereotyping, and discrimination observed that foreign-born Asian American adolescents were less likely than their U.S.-born Asian peers to report high levels of cultural socialization and model minority stereotypes (Kiang et al., 2019). The same study also evidenced that Asian American adolescents with high levels of both ethnic-racial socialization and model minority stereotyping reported increases in subsequent identity commitment and decreases in negative mood one year later, compared with those with low levels of ethnic-racial socialization and moderate stereotyping experiences (Kiang et al., 2019). These results reflected the role of nuanced interpretations of socialization messages and social stratification contexts in shaping Asian American youth development (Mistry et al., 2016), such that model minority stereotyping in conjunction with high levels of cultural socialization promoted Asian American youth's emotional well-being and identity development (Kiang et al., 2019). These findings, however, did not elucidate how multidimensions of ethnic-racial identity and socialization and internalization of the model minority myth manifest within the Asian American group. Addressing this gap, the present study contributes to the extant literature by exploring the heterogeneity of ethnic-racial experiences among Asian American adolescents.

A Multidimensional Examination of Well-Being Among Asian American Youth

Another goal of this study is to unpack joint contributions of ethnic-racial identity, socialization, and internalization of the model minority myth to Asian American adolescents' well-being. Most prior research examining ethnic-racial experiences of Asian American youth focusing on psychosocial and academic outcomes (e.g., Atkin et al., 2018; Kiang et al., 2019); it is less clear about their impact on other facets of health, such as physical and behavioral outcomes. The present study utilizes a multidimensional approach (Mistry et al., 2016) to understand Asian American adolescents' well-being across psychosocial, academic, and health domains. Adolescents' sleep is one of the key outcomes,

since it is a critical biobehavioral health indicator (Baddam et al., 2018) and it is not immune to the detrimental impact of race-based stressors (e.g., discrimination; Slopen et al., 2016). Limited empirical research observes a positive association between overall ethnic-racial identity and sleep quality among Asian American college students (Karan & Park, 2020); the present study extends the literature by incorporating ethnic-racial socialization and racialized experiences (e.g., internalization of the model minority myth) and examining their combined influences on sleep health of Asian American youth. In addition to the inclusion of multiple indicators of academic performance (i.e., overall grades and school engagement) and internalizing outcomes (i.e., depressive symptoms and self-esteem), this study also examines the links between ethnic-racial experiences and externalizing behaviors (i.e., delinquency). Examining well-being from a multidimensional perspective could facilitate better understanding of how ethnic-racial identity, socialization, and racialized experiences are collectively associated with central developmental competencies of Asian American adolescents (Kern et al., 2015; Mistry et al., 2016).

Current Study

Prior research has documented the contributing roles of ethnic-racial identity, socialization, and racialized experiences in shaping Asian American youth development. However, most studies have investigated the developmental impact of these constructs in isolation; how they collectively influence Asian American youth development is less clear. The present study fills this research gap by exploring the joint implication of ethnic-racial identity, socialization, and model minority experiences for Asian American adolescents' developmental competencies. For the purpose of conciseness, the present study uses *ethnic-racial knowledge* (i.e., individuals' understanding of and attitudes toward their cultural heritage, ethnic-racial group membership, and associated experiences with stereotypes and discrimination; Hughes et al., 2016, p. 3) to represent a collective construct of ethnic-racial identity, socialization, and internalization of the model minority myth for Asian American adolescents. The first goal is to explore the heterogeneity of ethnic-racial knowledge within Asian American youth by identifying unique and distinct profiles using a person-centered approach. The second goal is to examine how profiles are associated with developmental outcomes. It is hypothesized that adolescents in profiles with higher levels of ethnic-racial knowledge (i.e., reporting higher levels in multiple indicators of ethnic-racial identity, socialization, and internalization of the model minority myth) will demonstrate more favorable psychosocial and academic outcomes than their peers with moderate or lower levels of ethnic-racial knowledge (i.e., reporting moderate or lower levels in multiple indicators of ethnic-racial identity, socialization, and internalization of the model minority myth; Hypothesis 1). Due to the salience of ethnicity and race in the United States, it is also hypothesized that adolescents with lower levels of ethnic-racial knowledge will have lower levels of adjustment in psychosocial and academic domains (Hypothesis 2). Given the dearth of research on sleep and delinquency among Asian American adolescents, analyses examining the associations between the profiles and these two constructs are largely exploratory.

Methods

Participants

Data for this study were drawn from the first year of a 4-year longitudinal study examining the impact of stress on sleep and psychological well-being among ethnically/racially diverse high school students. The sample consists of 145 participants who self-identified as "Asian or Asian American" (65% female; ages ranging from 13 to 17 years old, $M = 14.3$, $SD = 0.59$). Adolescents were primarily of Chinese descent (74%), with Korean (8%), Indian (4%), Vietnamese (1%), Filipino (1%), and Other Asians (12%) also represented. The majority of participants (87%) considered themselves monoracial; of those who identified as multiracial, 71% indicated another Asian or Asian American group as their secondary race and 18% indicated Hispanic or Latino. Most participants (76%) chose not to disclose their nativity; of those who did, 71% were born in the United States and 29% were foreign-born. While many participants reported not knowing their parents' highest level of education (33% mothers, 43% fathers), some adolescents reported their parents' education as beyond high school (35% mothers, 27% fathers).

Procedures

Participants were recruited from five public high schools in a large urban area in the United States Northeast. Participating schools were chosen based on their ethnic-racial diversity, with the Simpson's (1949) Diversity Index scores ranging from 0.29 to 0.61 (0 = no diversity, 1 = highest diversity). This study was approved by the authors' institutional review board and the regional Department of Education. Recruitment consisted of mailing consent forms to Asian, Black, and Latinx ninth grade students and distributing information via flyers and in-class presentations. Only students with written parental consent participated. Adolescents first completed the online pre-survey which includes demographic information, and then were given a wrist actigraph to wear for 14 days and a data-enabled electronic tablet to complete online daily diary surveys each night before bed. Adolescents completed an average of 11.8 daily diary reports ($SD = 3.1$, maximum = 14). At the end of the 14 days, participants were sent a link to complete the online post-survey which included ethnic-racial knowledge and outcome measures. Each participant was compensated $40.

Measures

Indicators of ethnic-racial knowledge

Ethnic-racial identity: Identity exploration and commitment were assessed using 12 items from the adapted Multigroup Ethnic Identity Measure (Phinney, 1992). The exploration subscale includes 5 items (e.g., "In order to learn more about my racial/ethnic background, I have often talked to other people about my racial/ethnic group."), and the commitment subscale includes 7 items (e.g., "I have a strong sense of belonging to my own racial/ethnic group."). All items were rated on a 4-point scale (0 = *strongly disagree* to 3 = *strongly agree*), with higher scores reflecting more exploration (Cronbach alpha (α) = 0.91) or commitment ($\alpha = 0.82$).

Identity private regard and centrality were measured by the Multidimensional Inventory of Black Identity scale (MIBI; Sellers et al., 1997). The private regard subscale includes 4

items (e.g., “I am happy that I am a member of my racial/ethnic group.”), and the centrality subscale includes 4 items (e.g., “I have a strong sense of belonging to people from my racial/ethnic group.”). Each item was rated on a 7-point scale (0 = *strongly disagree*, 6 = *strongly agree*), with higher scores reflecting greater private regard and centrality. Based on a thorough psychometric study examining factor structures of MIBI and measurement invariances across diverse samples (Cheon et al., 2019), the subscales of centrality and private regard ($r = 0.77$, $p < 0.01$) were psychometrically indistinguishable from each other. Therefore, a composite score of private regard/centrality ($\alpha = 0.91$) was computed for analysis.

Ethnic-racial socialization: Adolescents reported their parents’ socialization practices now and/or when they were younger by completing the Racial Socialization scale (Hughes & Chen, 1997). The scale includes 5 items for cultural socialization (e.g., “How often have your parents celebrated any cultural holidays of your racial/ethnic group with you?”) and 5 items for preparation for bias (e.g., “How often have your parents said people of your race/ethnicity are more likely to be treated poorly or unfairly than people of other races?”). Each item was rated on a 5-point scale (0 = *never*, 4 = *very often*), with higher scores reflecting higher levels of cultural socialization ($\alpha = 0.86$) or preparation for bias ($\alpha = 0.80$).

Internalization of the model minority myth.: An adapted version of the Internalization of the Model Minority Myth Measure (IM-4; Yoo et al., 2010) assessed adolescents’ internalization of the model minority myth. Although the IM-4 includes multiple subscales, the present study focused on achievement orientation, a 7-item subscale assessing the extent to which Asian adolescents believed that they were academically more successful than other ethnic-racial groups because of hard work and perseverance. Adolescents were asked to compare themselves with Whites and other ethnic-racial minorities (e.g., African Americans, Hispanic, Native Americans). Example items include: “Asian Americans have stronger work ethics.” Responses were rated on a 7-point scale (0 = *strongly disagree*, 6 = *strongly agree*). The comparison with Whites ($M = 3.54$, $SD = 0.99$; $\alpha = 0.95$) and other racial minorities ($M = 3.63$, $SD = 0.99$; $\alpha = 0.93$) was highly correlated ($r = 0.81$, $p < 0.001$), and thus, in this study a mean score ($M = 3.7$, $SD = 1.21$; $\alpha = 0.96$) was computed for analysis.

Well-being outcomes

Sleep duration, quality, and inconsistency (actigraphy): Three actigraphy-measured sleep parameters were included: sleep duration (i.e., the number of minutes between sleep onset and offset), wake after sleep onset (WASO, i.e., the number of wake minutes after sleep onset, with higher WASO reflecting poorer sleep quality), and sleep inconsistency (i.e., inconsistency in sleep schedule and/or duration from day to day, see Okano et al., 2019; the present study used the standard deviation of sleep duration across 14 days as a proxy for sleep inconsistency, with higher scores reflecting greater inconsistency). Participants wore a Motionlogger (Ambulatory Monitoring, Ardsley, NY) wrist actigraph for 14 nights. Sleep and wake states were recorded continuously in one-minute epochs. Actigraphy data were analyzed using the Sadeh’s (2011) sleep algorithm and manually scored by trained research assistants. To obtain inter-rater reliability (IRR), 10% of files were scored by two research assistants; the mean IRR was good ($M = 0.92$, $SD = 0.07$). For sleep duration and WASO, an

average of 14-day reports was estimated to create person-level indicators for analyses (see Table 1 for descriptives).

Sleep/wake problems: In addition to actigraphy, self-reported sleep/wake problems were collected using daily diaries. The Pittsburgh Sleep Quality Index (Buysse et al., 1989) measured sleep disturbance (8 items, e.g., "Woke up in the middle of the night or early morning") and daytime dysfunction (2 items, e.g., "Today, how much trouble did you have staying awake while doing homework, in class, eating meals, or spending time with friends?"). The sleep disturbance subscale was rated on a 4-point scale (0 = *not at all*, 3 = *a lot*), and the daytime dysfunction subscale was also rated on a 4-point scale (0 = *not a problem at all*, 3 = *a very big problem*), with higher scores reflecting greater sleep disturbance or daytime dysfunction. The intraclass correlation coefficients (ICC) observed considerable variation in sleep disturbance (ICC = 0.60) and daytime dysfunction (ICC = 0.40). The Cronbach alphas indicated good internal consistency for sleep disturbance (M = 0.81, SD = 0.05; αs = 0.67 to 0.91) and daytime dysfunction (M = 0.78, SD = 0.07; αs = 0.63 to 0.90). An average of 14-day reports was computed to estimate person-level sleep/wake problems (see Table 1 for descriptives).

Psychosocial well-being: Adolescents' psychosocial well-being was operationalized by depressive symptoms and self-esteem. Participants' depressive symptoms over the past two weeks were assessed by the Center for Epidemiological Studies-Depression (Radloff, 1977), a 20-item measure (e.g., "I was bothered by things that don't usually bother me.") rated on a 5-point scale (0 = *never*, 4 = *all of the time*). Adolescents' self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965), a 10-item scale (e.g., "I take a positive attitude toward myself.") rated on a 5-point scale (0 = *strongly disagree*, 4 = *strongly agree*). The Cronbach alphas indicated good internal consistency for depressive symptoms (α = 0.89) and self-esteem (α = 0.70).

Academic outcomes: Adolescents' academic performance was assessed using both objective and subjective indicators. Ninth-grade grade point average (GPA) was provided by the regional Department of Education. An adapted version of the Wellborn measure (Wellborn, 1991; see also Skinner et al., 2009) assessed school engagement (10 items, e.g., "I enjoy learning new things in class."). Responses were rated on a 5-point scale (0 = *never*, 4 = *all the time*), with higher scores reflecting greater engagement (α = 0.91).

Delinquency: Delinquent behavior was assessed using the Delinquency Scale (Kisker et al., 2004), a 6-item scale evaluating behaviors at school during the past six months (e.g., "How often were you sent home from school for bad behavior?") rated on a 4-point scale (0 = *never*, 3 = *many times*), with higher scores reflecting higher levels of delinquency (α = 0.74).

Demographics

Since prior research demonstrates sociodemographic differences (e.g., gender, age, multiracial (relative to biracial) status, families socioeconomic status) in ethnic-racial knowledge and the impact on developmental outcomes (Umaña-Taylor & Hill, 2020; Yip et

al., 2019), five covariates were included in analyzing possible variation in profiles, including adolescents' gender, age, multiracial status, and their mother's and father's education level (as indicators of family socioeconomic status). Nativity was not included as a covariate in analysis due to the high missingness rate (76%).

Results

Descriptive Analyses

*M*s, *SD*s, and correlations among the key study variables are presented in Table 1. Among the six indicators of ethnic-racial knowledge, there were positive correlations among identity exploration, commitment, private regard/centrality, and cultural socialization. Cultural socialization was positively correlated with preparation for bias and internalization of the model minority myth (achievement orientation). Preparation for bias was negatively related to commitment. For correlations between ethnic-racial knowledge indicators and well-being outcomes, identity exploration was associated with greater school engagement; both identity commitment and private regard/centrality were associated with less depressive symptoms, greater self-esteem, and higher levels of school engagement. Cultural socialization was linked to greater school engagement. Preparation for bias was associated with less sleep duration, greater sleep disturbance and daytime dysfunction, more depressive symptoms, lower levels of self-esteem, less average grades, and more delinquent behaviors. Internalization of achievement orientation was positively associated with cultural socialization but did not have bivariate associations with any well-being outcomes.

Latent Profiles of Ethnic-Racial Knowledge

Latent profile analysis examined patterns of the ethnic-racial knowledge using six indicators (i.e., identity exploration, commitment, and private regard/centrality; cultural socialization and preparation for bias; and internalization of achievement orientation). Following Berlin et al. (2014) suggestion, a series of models from 1- to 4-profile solutions were fit (the 5-profile model was not identified). The models were evaluated on: (1) multiple indices of model fit, including Akaike information criteria (AIC), Bayesian information criteria (BIC), sample-size adjusted Bayesian information criteria (Adjusted BIC), entropy, and likelihood ratio tests; and (2) substantive meaning or theoretical interpretation of profiles (Berlin et al., 2014; Lo et al., 2001). Since a three-step approach using auxiliary function outperforms mean-comparison tests and regression-oriented approaches by reducing incorrect standard errors (Asparouhov & Muthén, 2014), this method was used to investigate: (1) possible variation in demographic predictors of profiles; and (2) differences in well-being outcomes across profiles. Analyses were conducted with M*plus* (version 8.4, Muthén & Muthén, 1998), accounting for missing data using full information maximum likelihood estimation.

Latent profile analyses were conducted among 134 Asian American adolescents, with 11 cases excluded due to missingness on all indicators. Model fit statistics (Table 2) including: (1) relatively small reductions in AIC, BIC, and adjusted BIC values by adding the fourth profile; (2) an decrease in entropy value for the 4-profile model; and (3) very small numbers of adolescents classified into the fourth profile (<5%) suggested an optimal 3-profile solution. The 3-profile solution (Fig. 1) provided a meaningful interpretation of

each profile. The first profile is *Salient* (n = 18, 13%, the smallest group); adolescents in this group reported high levels of ethnic-racial identity (i.e., exploration, commitment, and private regard/centrality), greater cultural socialization, relatively low levels of preparation for bias, and moderate internalization of achievement orientation. The second profile is *Moderate* (n = 96, 72%, the largest group); compared with youth in *Salient*, adolescents in this profile reported moderate levels of all 6 indicators. The last profile is *Marginal* (n = 20, 15%), and youth in this group reported relatively low levels of ethnic-racial identity, less cultural socialization, comparatively higher levels of preparation for bias, and slightly less internalization of achievement orientation. Of note, group differences were observed on all indicators except for internalization of achievement orientation (Table 3), suggesting that overall, adolescents reported similarly moderate levels of internalization of achievement orientation.

Demographic variation across profiles was investigated with multinomial logistic regressions using the three-step approach (Asparouhov & Muthén, 2014), and there were no significant differences among the demographic variables (i.e., adolescents' gender, age, and multiracial status, mother's education level, and father's education level) across profiles.

Associations Between Profiles and Well-Being Outcomes (Hypotheses 1 and 2)

The means and standard errors of well-being outcomes for each profile are displayed in Table 4, along with the Chi-Square statistics and p values of comparisons across profiles.

Sleep

Youth in *Moderate* reported better sleep quality (i.e., less actigraphy-measured WASO (χ^2 (2) = 4.51, p = 0.03) and less self-reported sleep disturbance (χ^2 (2) = 7.16, p = 0.01)) than their peers in *Marginal*. Adolescents in *Salient* experienced lower levels of sleep disturbance (χ^2 (2) = 5.75, p = 0.02) than those in *Marginal*. The *Moderate* group had marginally less WASO than the *Salient* group (χ^2 (2) = 2.92, p = 0.09). No significance results were observed for sleep duration, sleep inconsistency, or daytime dysfunction. Taken together, adolescents in *Moderate* had better overall sleep quality, compared with those in the other two groups.

Psychosocial Well-Being

Relative to the other two groups, *Salient* reported greater self-esteem (*Moderate*: χ^2 (2) = 7.74, p = 0.01; *Marginal*: χ^2 (2) = 12.49, p < 0.001). In contrast, adolescents in *Marginal* had the highest levels of depressive symptoms (*Salient*: χ^2 (2) = 7.02, p = 0.01; *Moderate*: χ^2 (2) = 8.27, p < 0.01). Taken together, youth in *Salient* demonstrated higher levels of self-esteem than their peers in the other two groups; the *Marginal* group reported poorer overall psychological adaptation than the other two groups.

Besides self-esteem and depressive symptoms, differences in adolescents' mood (including positive, negative, and anxious mood) across profiles were also examined. The *Salient* group reported more positive mood than the other two groups (*Moderate*: χ^2 (2) = 4.19, p = 0.04; *Marginal*: χ^2 (2) = 13.74, p < 0.001). No significant results were observed for negative mood or anxious mood. Due to overlapped constructs and strong correlations between

positive mood and self-esteem ($r = 0.57$, $p < 0.01$) and among negative mood, anxious mood, and depressive symptoms (rs = 0.68 to 0.78, ps < 0.01), the results were not presented in the current study.

Academic Performance

Youth in *Salient* reported the highest levels of school engagement (*Moderate*: χ^2 (2) = 3.90, $p = 0.048$; *Marginal*: χ^2 (2) = 8.70, $p < 0.01$). Despite differences in self-reported engagement, there were no significant differences in grades across profiles. Taken together, *Salient* outperformed the other two groups on self-reported school engagement but not on grades.

Delinquency

Adolescents in *Moderate* reported fewer delinquent behaviors than their peers in *Marginal* (χ^2 (2) = 6.06, $p = 0.01$). There were no differences between *Salient* and the other two groups. Taken together, the *Moderate* group demonstrated lower levels of delinquency than the *Marginal* group.

Discussion

Although research has demonstrated the importance of ethnic-racial identity and socialization experiences in Asian American youth development (Rivas-Drake et al., 2014), most studies have examined the developmental impact of these constructs in isolation, with equivocal conclusions about the direction of effects (i.e., positive or negative). Guided by the integrative models for youth of color (Garcia-Coll et al., 1996; Mistry et al., 2016), the present study fills the gaps using a person-centered approach (Laursen & Hoff, 2006) to elucidate ethnic-racial knowledge profiles derived from ethnic-racial identity, socialization, and internalization of achievement orientation and their collective implication for Asian American youth development. Results identified three distinct profiles: *Salient*, *Moderate*, and *Marginal*. Overall, adolescents in *Salient* demonstrated more favorable psychosocial and academic outcomes; adolescents in *Moderate* had better sleep quality and fewer delinquent behaviors, with moderate academic and psychosocial adaptation; lastly, youth in *Marginal* reported the poorest well-being outcomes. The current study unpacked the heterogeneity of ethnic-racial experiences within the Asian American group and highlighted the importance of examining the joint influences of ethnic-racial identity, socialization, and model minority experiences on Asian American youth development from a multidimensional perspective.

Ethnic-Racial Knowledge Profiles

This study identified three distinct patterns of ethnic-racial knowledge. In contrast to prior research, where most Asian American adolescents (54%) reported moderate model minority stereotyping coupled with low levels of cultural socialization and preparation for bias (Kiang et al., 2019), the current study observed that the largest group, *Moderate* (72%), reported moderate scores on all dimensions of ethnic-racial knowledge. Results observed that moderate socialization experiences and internalization of achievement orientation were accompanied by moderate levels of multiple ethnic-racial identity dimensions (i.e., exploration, commitment, and private regard/centrality). There may be several reasons for

this novel observation. First, in comparison to the previous study investigating profiles of ethnic-racial socialization and racialized experiences (Kiang et al., 2019), the current study incorporates multifaceted ethnic-racial identity development into the examination of ethnic-racial knowledge patterns. As a key component of social identities among youth of color, ethnic-racial identity is highly developmentally salient and provides critical assets for diverse adolescents' psychosocial, academic, and health outcomes (Rivas-Drake et al., 2014). Given the intricate links among ethnic-racial identity, socialization, and racialized experiences (Hughes et al., 2016), it is important to blend multiple identity dimensions into the examination of ethnic-racial knowledge that Asian American adolescents navigate. The present study extends the extant literature by unpacking more comprehensive, nuanced ethnic-racial knowledge profiles among Asian American youth.

Another explanation may be related to the contrasting demographic characteristics of the samples that the profiles derived from. Participants of the present study consists of Asian American youth (primarily of Chinese descent) living in traditional immigrant communities located in a highly diverse urban area in Northeast, whereas prior findings (e.g., Kiang et al., 2019) relied on Asian American adolescents (mostly Southeast Asians, e.g., Hmong, Cambodian) recruited from emerging immigrant communities in Southeast. Growing up in more ethnically/racially diverse contexts promotes positive ethnic-racial identity development and heritage socialization (Kiang et al., 2016), which may explain a higher proportion of youth reporting moderate levels of ethnic-racial identity and cultural socialization observed in the current study (72%), comparing to more adolescents demonstrating low cultural salience (54%) reported by Kiang and colleagues (2019). Further, the different histories and backgrounds of immigration may also contribute to this inconsistency, given that Southeast Asians (e.g., Hmong) are more likely to migrate under involuntary and stressful circumstances than their East Asian fellows (e.g., Chinese, Korean; Kiang et al., 2016). It should be noted that generational status may play a role in shaping the patterns of socialization and model minority experiences (Kiang et al., 2019). Unfortunately, given the high missing rate of nativity (76%), the current study was unable to examine if the profiles differ by generational status. Still, this study extends prior findings on Asian American youth's ethnic-racial experiences by elucidating distinct ethnic-racial knowledge patterns in highly diverse urban communities in Northeast.

The other two profiles were *Salient* and *Marginal*. Adolescents in *Salient* (13%) were more culturally prepared by reporting higher levels of all ethnic-racial identity dimensions and greater cultural socialization, moderate internalization of achievement orientation, but less preparation for bias. The last group, *Marginal* (15%), was characterized by lower levels of ethnic-racial identity across all dimensions, less cultural socialization and internalization of achievement orientation, but higher levels of preparation for bias. The co-occurrence of high (or low) ethnic-racial identity development and high (or low) cultural socialization is consistent with prior findings on the positive links between multifaceted ethnic-racial identity and cultural socialization (Gartner & Kiang, 2014). For preparation for bias, however, its associations with ethnic-racial identity subdimensions were in the opposite direction for the *Salient* and *Marginal* groups, which is inconsistent with an observation on the positive link between preparation for bias and overall ethnic-racial identity found in a meta-analysis ($r = 0.08$, $p < 0.001$; Huguley et al., 2019). One explanation is that results

relying on various ethnic-racial groups (i.e., African American, Latinx, Asian American, and mixed race; Huguley et al., 2019) may not fully explain the nuances of ethnic-racial experiences among Asian American adolescents. Findings drawn upon Asian American adolescents demonstrated non-significant bivariate correlations between preparation for bias and overall ethnic-racial identity (Daga & Raval, 2018). Of note, preparation for bias was positively correlated with cultural socialization ($r = 0.17$, $p < 0.05$), an observation also made among other Asian American youth samples (e.g., Gartner & Kiang, 2014). After accounting for multidimensions of ethnic-racial identity, the association between cultural socialization and preparation for bias may vary, depending on the levels of ethnic-racial identity. It is possible that Asian American youth who perceived more positive messages about their ethnic-racial history and heritage were more likely to engage in activities pertaining to their ethnic-racial identity development and demonstrate pride toward their own ethnic-racial group (Daga & Raval, 2018), whereas youth had more awareness of potential racism and discrimination but received less pride and heritage socialization tended to demonstrate lower levels of ethnic-racial identity development. Through identifying three distinct profiles of ethnic-racial knowledge, this study contributes uniquely to the literature by unpacking heterogeneity among Asian American adolescents, an empirically underrepresented ethnic-racial group (Yip et al., 2021), and demonstrating how their socialization experiences coupled with multidimensional ethnic-racial identity development and model minority experiences.

Of note, all three groups reported comparably moderate levels of model minority experiences (average scores were between “neutral” and “somewhat agree”), which is consistent with prior research using the same scale (e.g., Yoo et al., 2015). One explanation is that this study measured academic orientation associated with internalization of the model minority myth, which reflects the extent to which Asian American youth attributed their comparatively better academic performance to hard work and persistence (Yoo et al., 2010). The emphasis on education in Asian cultures is manifested in Asian parents’ beliefs and practices, which places extreme value to the importance of industriousness in attaining educational success (Chao, 2000). Lee and Zhou (2014) observed that Asian families, regardless of their socioeconomic status, were prone to make collective efforts to help their children to achieve a “success frame:” “getting straight A’s, graduating as valedictorian or salutatorian, getting into one of the top schools or an Ivy, and pursuing some type of graduate education in order to work in one of the ‘four professions’: doctor, lawyer, pharmacist, or engineer” (p. 45). As such, it is possible that Asian American adolescents uniformly internalize the importance of hard work and academic achievement, despite their levels of ethnic-racial identity development and cultural socialization.

Profiles and Youth Outcomes

Another contribution of this study is the examination of the associations between ethnic-racial knowledge profiles and Asian American youth outcomes. Results observed that ethnic-racial experiences could be a protective or risk factor depending on how different aspects of socialization were accompanied by multidimensional ethnic-racial identity development and internalization of achievement orientation. This may help explain the mixed findings from previous studies on the impact of ethnic-racial identity, socialization,

and model minority experiences. In particular, the *Salient* group demonstrated greater self-esteem and more school engagement; this group also evidenced lower levels of depressive symptoms (comparable to *Moderate*) than *Marginal*. The benefits of high levels of ethnic-racial identity development and cultural socialization may explain why youth in *Salient* performed better both psychosocially and academically than peers in the other two groups, although they reported similar levels of internalization of achievement orientation. This finding is in line with prior research documenting the protective effects of ethnic-racial identity (commitment, private regard, and centrality) and cultural socialization on Asian American adolescents' academic (Seol et al., 2016) and psychosocial (Atkin et al., 2019) development. Further, the findings suggested that ethnic-racial identity and socialization may function synergistically, such that when adolescents demonstrated high levels of identity commitment, private regard/centrality, and heritage socialization, frequent identity exploration and receiving less bias socialization messages appear to be protective, a novel observation that may help explain the perplexing roles of identity exploration and preparation for bias in youth development (Wang et al., 2020). Of note, adolescents in the three groups had comparably high average grades (*M*s = 88.10 to 89.76), probably because most of the participants (82%) were East Asian Americans, who usually have higher academic achievement than other Asian subgroups (Asian American Federation, 2014). It would be informative for future research to examine the links between ethnic-racial knowledge profiles and average grades among Southeast Asian groups (e.g., Cambodian, Hmong), who have lower academic performance and higher dropout rates than other Asian subgroups (Asian American Federation, 2014).

Moreover, youth in *Moderate* fared better with regards to overall sleep quality: They reported less WASO and lower levels of sleep disturbance than their peers in *Marginal*; they also demonstrated marginally less WASO than those in *Salient*. Prior research examining sleep health of Asian American adolescents remains very limited (Guglielmo et al., 2018); available findings suggest that Asian American adolescents are at a higher risk of shorter sleep duration and poorer sleep quality than other ethnic-racial groups (Yip et al., 2020). The present study contributes to a burgeoning literature examining the associations between ethnic-racial experiences and sleep quality among Asian American youth (Ong et al., 2017) by linking the patterns of ethnic-racial knowledge to both self-reported and objective, actigraphy-measured sleep outcomes. Results observed that moderate levels of ethnic-racial identity development and adequate cultural and bias socialization were associated with better sleep quality, an observation different from prior findings on the benefits of stronger ethnic-racial identity (Yip et al., 2019) and cultural orientation (Karan & Park, 2020) for sleep health. Given that ethnic-racial identity serves as a double-edged sword (Yip, 2018), it is possible that maintaining excessively high levels of ethnic-racial identity and cultural socialization (i.e., *Salient*) may be detrimental for sleep quality. Further, being chronically alert and vigilant to potential discrimination is associated with poorer sleep quality (Gordon et al., 2020), which explains that adolescents in *Marginal* (with high levels of preparation for bias) reported the most sleep disturbances.

It is also noteworthy that although the three groups were not significantly different in sleep duration at the 0.05 level, adolescents in *Salient* (*M* = 414.66 min (~7 h), *SE* = 28.34) had longer sleep duration than their peers in *Marginal* (*M* = 316.95 min (~5.3 h), *SE* = 45.71; χ^2

(2) = 3.48, $p = 0.06$). This finding may be partly driven by preparation for bias, which was negatively correlated with sleep duration ($r = -0.27$, $p < 0.01$). Since discrimination-related stress often leads to shorter sleep length (Slopen et al., 2016), it is possible that receiving more messages about potential bias and discrimination (i.e., the *Marginal* group) may have negative consequences for Asian American youth's sleep duration. For non-significant findings on other sleep indicators, given the scarcity of literature on sleep health among Asian American adolescents (Carnethon et al., 2016), it is uncertain why adolescents in the three groups reported similar levels of sleep inconsistency and daytime dysfunction. Despite, this study contributes uniquely to the literature by providing novel insights into the domain-specific associations between distinct ethnic-racial knowledge profiles and sleep health of Asian American youth.

Finally, adolescents in *Marginal* demonstrated the least adaptive outcomes across all domains, which is consistent with existing research citing the protective effects of strong ethnic-racial identity (Rivas-Drake et al., 2014) and cultural socialization (Umaña-Taylor & Hill, 2020) on youth development. It is noteworthy that adolescents in this group, who were ethnically/racially resistant, demonstrated more delinquent behaviors than their counterparts who had higher levels of ethnic-racial identity and were more culturally socialized, aligning with prior findings on the positive associations between both ethnic-racial identity and socialization and behavioral health (Wang et al., 2020). This study extends the dearth of research examining delinquent behaviors of Asian American adolescents (Tan, 2018).

Limitations

Several limitations should be noted when interpreting the findings. First, the results on ethnic-racial knowledge profiles are constrained by the limited representativeness of the sample. The findings do not observe significant demographic variations in the profiles, probably because the participants consist of Asian American youth who are primarily of Chinese descent (74%) from relatively low socioeconomic backgrounds. Unfortunately, the small sample sizes for each Asian subgroup (e.g., 4% Indian, 1% Vietnamese) and high missingness rate for nativity (76%) preclude further examination of intra-ethnic comparisons and variation by generational status (e.g., 1st versus 2nd generation) across profiles. Asian Americans are a highly heterogeneous group (Yip et al., 2021), and future work should sample a larger group of Asian Americans with more ethnically, generationally, and socioeconomically diverse backgrounds to examine the nuances of ethnic-racial knowledge patterns. It should also be noted that most of the participants were recruited from an urban high school enrolling predominantly Asian students (over 57%), which may explain the limited variation in internalization of achievement orientation found in this study (Fig. 1). Given that internalization of the model minority myth could be moderated by school ethnic-racial composition (Atkin et al., 2018), it would be informative for future research to investigate ethnic-racial knowledge profiles of Asian American adolescents from predominantly Asian versus predominantly non-Asian schools.

Second, this study included only one time point of data to examine ethnic-racial knowledge profiles. Given that ethnic-racial identity development and ethnic-racial socialization are changing processes at different ages and stages of development (Hughes et al., 2016),

future research should collect multiple waves of data on ethnic-racial identity, socialization, and model minority experiences to explore distinct profiles of ethnic-racial knowledge trajectories among Asian American children and adolescents. Additionally, it would be informative for future work to examine the stability or variability in profile membership over time and how change in ethnic-racial knowledge patterns is associated with youth outcomes. Racialized experiences besides internalization of the model minority myth, such as ethnic-racial discrimination, should also be considered in the future examination of ethnic-racial knowledge profiles, given its interconnections with ethnic-racial identity and socialization and the profound impact on the development of youth of color (Hughes et al., 2016). Lastly, due to the cross-sectional nature of the present study, the findings provide no support for the predicting effects of ethnic-racial knowledge on youth outcomes. Future studies using a prospective, longitudinal design to examine the longer-term impact of ethnic-racial knowledge patterns would be worthwhile.

Conclusion

Ethnic-racial identity, ethnic-racial socialization, and racialized experiences are fundamental to the development of youth of color (Hughes et al., 2016). Most prior studies have examined the developmental impact of these constructs in isolation; the present study addresses this research gap using a person-centered approach to illuminate three distinct patterns of key components of ethnic-racial knowledge (i.e., ethnic-racial identity, socialization, and internalization of the model minority myth) and highlights their combined influences on health and well-being among Asian American adolescents. This study contributes uniquely to the literature and extends the dearth of research on Asian Americans, an underrepresented ethnic-racial group in psychological research (Tseng et al., 2016), by exploring the heterogeneity of ethnic-racial knowledge and experiences within this group. Importantly, the current study also contributes to developmental research more broadly by using a multidimensional approach to examine the domain-specific links between ethnic-racial knowledge and adolescent development across psychosocial, academic, and health domains. Lastly, the findings point to important implications for clinicians and professionals working closely with Asian American children and youth, whose needs for academic, psychological, and health support are typically overlooked due to the perpetuation of the "high-achieving," "problem-free" model minority images (Yip et al., 2021). Clinicians and professionals should be aware of heterogeneity within the Asian American group and provide better support particularly for ethnically/racially marginalized Asian American adolescents (e.g., youth in the *Marginal* group) to cope with the psychosocial, academic, and health challenges they navigate.

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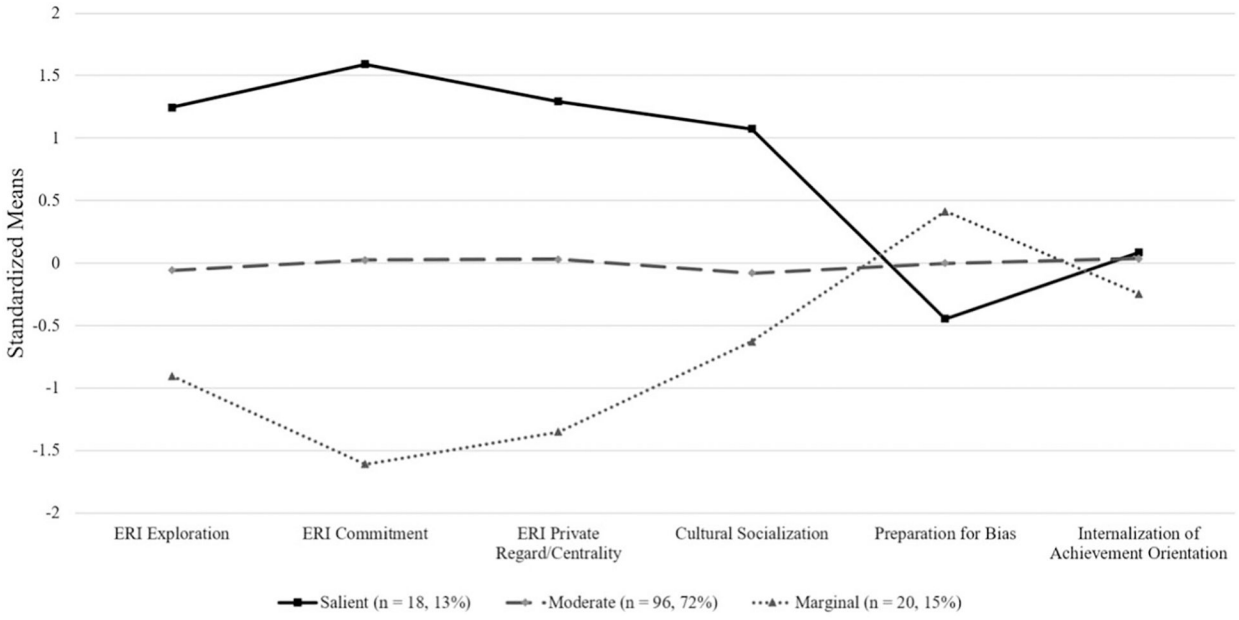

Fig. 1.

Profiles of ethnic-racial knowledge among Asian American Adolescents. *ERI* ethnic-racial identity

Table 1

Sample descriptive and correlations among key study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	*M*	*SD*
1. ERI Exploration	–																1.53	0.66
2. ERI Commitment	0.64**	–															1.92	0.53
3. ERI Private Regard/Centrality	0.50**	0.78**	–														4.00	1.05
4. Cultural Socialization	0.49**	0.45**	0.41**	–													2.05	1.02
5. Preparation for Bias	0.15	−0.17*	−0.14	0.17*	–												1.20	0.67
6. Internalization of MMM	0.09	0.01	0.16	0.26**	.17	–											3.59	0.94
7. Sleep Duration	−0.06	0.13	0.06	0.02	−0.27**	−0.11	–										373.72[a]	126.97
8. WASO	−0.08	0.04	−0.14	0.07	−0.02	0.04	0.17	–									22.76[a]	15.44
9. Sleep Inconsistency	0.03	0.02	0.01	0.07	−0.05	−0.01	−0.12	−0.03	–								78.62	39.84
10. Sleep Disturbance	0.05	−0.14	−0.15	−0.01	0.23**	−0.09	−0.11	0.12	−0.05	–							0.51	0.49
11. Daytime Dysfunction	0.06	−0.05	−0.04	0.10	0.22*	0.04	−0.24*	−0.09	0.18	0.39**	–						0.71	0.50
12. Depressive Symptoms	0.08	−0.25**	−0.28**	−0.01	0.28**	0.08	−0.24*	−0.17	0.06	0.55**	0.6**	–					1.12	0.61
13. Self-Esteem	0.08	0.26**	0.22*	0.17	−0.20*	−0.02	0.13	0.25*	−0.13	−0.13	−0.31**	−0.48**	–				2.18	0.52
14. Average Grades	0.00	0.03	0.16	0.12	−0.19*	0.15	0.16	−0.20	0.12	−0.14	0.03	−0.03	0.04	–			88.70	7.62
15. School Engagement	0.29**	0.22*	0.20*	0.21*	−0.15	0.04	−0.02	0.12	0.01	0.03	−0.19*	−0.20*	0.43**	0.37**	–		2.36	0.79
16. Delinquency	0.09	−0.04	−0.11	0.06	0.23**	−0.07	−0.01	0.01	0.02	0.45**	0.31**	0.44**	−0.14	−0.08	−0.08	–	1.02	1.66

ERI ethnic-racial identity, *Internalization of MMM* internalization of the model minority myth (achievement orientation), *WASO* wake after sleep onset

[a]The unit of time for sleep duration and WASO is in minutes

*$p < 0.05$,

**$p < 0.01$

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Table 2

Model fit statistics for latent profile analysis models

	AIC	BIC	Adjusted BIC	Entropy	Log-Likelihood	Bootstrapped LRT
1-profile	1845.41	1880.19	1842.23	_[a]	−910.71	_[a]
2-profile	1739.41	1794.47	1734.37	0.72	−850.71	$p < 0.001$
3-profile	**1672.88**	**1748.22**	**1665.98**	**0.91**	**−810.44**	$\mathbf{p} < 0.001$
4-profile	1636.57	1732.20	1627.82	0.87	−785.29	$p < 0.001$

The optimal solution is bolded

Smaller values of AIC, BIC, and Adjusted BIC indicate better model fit. A high value of entropy (>0.80, closer to 1) reflects more accurate classification. A significant *p*-value of bootstrapped LRT indicates improvement of k classes over k-1 classes (Lo et al., 2001)

AIC Akaike information criteria, *BIC* Bayesian information criteria, *Adjusted BIC* sample-size adjusted Bayesian information criteria, *LRT* Likelihood Ratio Test

[a]Entropy and bootstrapped LRT are not available for the 1-profile model

Table 3

Analysis of variance contrasting means of indicators of ethnic-racial knowledge across profiles

	***Salient* (13%)**		***Moderate* (72%)**		***Marginal* (15%)**		**Test Statistics**		
	M	***SD***	***M***	***SD***	***M***	***SD***	***F***	***p***	**Partial η^2**
ERI Exploration	2.41	0.45	1.49	0.53	0.93	0.58	38.03	**<0.001**	0.37
ERI Commitment	2.79	0.23	1.94	0.22	1.05	0.44	206.85	**<0.001**	0.76
ERI Private Regard/Centrality	5.40	0.51	4.04	0.73	2.54	0.82	74.85	**<0.001**	0.53
Cultural Socialization	3.17	0.71	1.98	0.90	1.36	0.99	20.52	**<0.001**	0.24
Preparation for Bias	0.88	0.89	1.20	0.60	1.49	0.69	3.99	**<0.05**	0.06
Internalization of MMM	3.70	1.21	3.61	0.91	3.33	0.21	0.71	0.50	0.01

Significant F statistics are bolded

ERI ethnic-racial identity, *Internalization of MMM* internalization of the model minority myth (achievement orientation)

Table 4

Mean comparisons of well-being outcomes across profiles

	***Salient* (13%)**		***Moderate* (72%)**		***Marginal* (15%)**		**Overall Test**	
	M	***SE***	***M***	***SE***	***M***	***SE***	**χ^2**	***p***
Sleep								
Sleep Duration	414.66	28.34	379.39	17.83	316.95	45.71	3.70	0.16
WASO	31.16	6.96	18.09_a	2.07	33.20_b	6.48	**8.23**	**0.02**
Sleep Inconsistency	101.65	19.09	75.11	4.12	76.45	9.13	1.81	0.41
Sleep Disturbance	0.44_a	0.09	0.44_a	0.04	0.94_b	0.19	**7.18**	**0.03**
Daytime Dysfunction	0.65	0.15	0.71	0.06	0.80	0.11	0.76	0.68
Psychosocial Well-Being								
Depressive Symptoms	0.94_a	0.18	1.05_a	0.05	1.65_b	0.20	**9.08**	**0.01**
Self-Esteem	2.68_a	0.19	2.12_b	0.05	1.94_b	0.09	**12.87**	**<0.01**
Academic Performance								
Average Grades	89.76	1.52	89.44	0.80	88.10	1.45	0.78	0.68
School Engagement	2.86_a	0.24	2.35_b	0.08	1.94_b	0.20	**8.75**	**0.01**
Behavioral Outcome								
Delinquency	1.25	0.38	0.62_a	0.15	2.59_b	0.78	**6.84**	**0.03**

Different subscripts within a row indicate significantly different means. Significant χ^2 statistics are bolded *WASO* wake after sleep onset