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Asian American mental health: Longitudinal trend and explanatory factors among young Filipino- and Korean Americans[☆]

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ABSTRACT

Objectives: This study examined a longitudinal trend of mental health among young Asian Americans during the transition from adolescence to emerging adulthood and investigated explanatory factors of the trend.

Method: We longitudinally followed a cohort of Filipino American and Korean American youth and their families in Midwest since 2014 ($N = 1,574$ in Wave 1). This study used three waves of youth data ($n = 781$, $M_{AGE} = 15$ in W1).

Results: Depressive symptoms and suicidal ideation significantly increased among the samples between 2014 and 2018, which also became more serious in severity. Intergenerational cultural conflict in the family and the experience of racial discrimination significantly contributed to the upsurge of mental health distress. Conversely, a strong peer relationship and ethnic identity were critical resources suppressing both depressive symptoms and suicidal ideation.

Conclusions: This study substantiated a troubling upward trend in mental health struggles among young Asian Americans and demonstrated a significant additive influence of culture and race/ethnicity on mental health beyond the normative influences of family process and peers. These key factors should be targeted in intervention to better serve Asian American young people who may mask their internal struggles.

Introduction

Mental health research among Asian American (AA) youth and young adults is fragmented. Numerous studies have shown that AA youth and young adults have higher rates of anxiety, depression, and suicidal thoughts than their White counterparts do (Austin & Chorpita, 2004; Chen, Stevens, Wong, & Liu, 2019; Sen, 2004). However, AAs have also been found to have rates of mental disorders comparable to other racial/ethnic groups including Whites (Hasin, Goodwin, Stinson, & Grant, 2005; National Institutes of Mental Health, 2015). The mixed data are likely reflective of methodological challenges, including small sample sizes and the variability of AA ethnic subgroups that were surveyed. Nevertheless, even with the lack of clarity of incidence rates of mental health problems among AA young people, it is clear that despite the oft-used label of “model-minority,” young AAs are vulnerable to developing mental health problems, at least equally, if not more than other racial/ethnic groups. This vulnerability is further amplified as AAs

report significantly lower rates of mental health service utilization than the general population (Abe-Kim et al., 2007; Lipson, Kern, Eisenberg, & Breland-Noble, 2018).

Previous studies of AA mental health have focused on a single time frame (e.g. elementary school years, college years). The subsequent dearth of longitudinal data precludes analysis of the transition from adolescence to young adulthood for AAs, notwithstanding speculation that this period constitutes a significant worsening of mental distress among AA young people (Liu, Stevens, Wong, Yasui, & Chen, 2019; Shibusawa, 2008). To address this gap, we have followed a cohort of AA youth over the course of four years and documented rates of mental health outcomes over three waves of data collection from 2014 to 2018. In addition, this study examined prominent predictors relevant to AA youth and young adults, including family process (e.g., parent-child relationships, parenting behaviors), peer (e.g., relations and quality), acculturation (e.g., bicultural identity) and race/ethnicity (e.g., racial discrimination). We further organized these predictors into “universal”

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vs. “group-specific” variables to examine the impact of each cluster on mental health, independently and collectively. A comprehensive model in which all variables are simultaneously accounted would reveal whether group-specific variables exacerbate mental health vulnerability among AAs. These findings are critical for public health and community interventions.

Filipino American and Korean American families

While often described as a monolithic group, the AA population consists of over 17 different languages, ethnicities and immigrant histories (Pew Research Center, 2013). Thus, disaggregating the AA population into ethnic-specific samples can shed light on how mental health varies and changes overtime among AAs as a whole, as well as between specific AA subgroups. The present study examines mental health among Filipino American (FA) and the Korean American youth (KA), respectively the third and fifth most populous communities of AAs in the U.S.

FA and KA have important areas of overlap and distinction. For example, both subgroups are part of the middle class with comparable median incomes and education backgrounds (Pew Research Center, 2013; U.S. Census Bureau, 2011), diminishing a confounding class effect in comparative analyses. However, the two groups are notably different with respect to acculturation patterns, family characteristics and processes, and youth outcomes (Choi, Park, Lee, Kim, & Tan, 2017). For example, FA families are significantly more acculturated than KA families in linguistic, occupational, and residential domains (Pew Research Center, 2017). Overall, second generation KAs retain their heritage language and live in ethnic communities at higher rates than do second generation FAs (Oh & Min, 2011). However, although FA and KA parents both preserve traditional family values, FA parents adhere to traditions in the family more so than KA parents (Choi, Kim, Noh, Lee, & Takeuchi, 2018). The similarities and differences of the two groups provides a strategic opportunity to examine the impact of acculturation and family process on mental health among AA subgroups.

Explanatory factors

Developmental research locates family process and peer influence at the core of youth development. The integrative model by Garcia Coll et al. (1996) expands developmental research to include the influences of heritage culture, acculturation, and racial positionality among non-White families to better explain developmental process of youth of color. Guided by the integrative model and its emphasis on the impact of culture and race, this study examines how universal factors and group-specific factors contribute to mental health among AA youth, in addition to several important demographic controls (e.g., ethnicity, gender, nativity and family socioeconomic status [SES]). Universal etiological factors are those factors that are predictive of mental health problems among youth, regardless of one’s racial/ethnic or cultural backgrounds. Group-specific factors are those that have particular salience to respective groups, i.e., in this study among our FA and KA samples.

Universal Factors

Family and peer relationships have long been identified to be the most important influences on adolescent attitudes and behaviors (Wright & Cullen, 2001). Accounting for family and peers as the two main developmental contexts for youth (e.g., Hawkins, Catalano, & Miller, 1992), we classified the following factors as universal: parent-child conflict, parent-child bonding, parental explicit affection, peer relationship and the number of antisocial peers. The quality of parent-child relationships and parenting remains significant during adolescence and young adulthood even as peer influences are dominant (Lansford et al., 2018; Piquart & Kauser, 2018; J. D. Smith, Knoble, Zerr, Dishion, & Stormshak, 2014; Sorkhabi, 2005). For example, certain aspects of family process, including high parent-child conflict, low

parent-child bonding, and low parent affection have been shown to be linked to negative mental health outcomes such as depression and anxiety (Maccoby & Martin, 1983; Okagaki & Luster, 2005). Similarly, peer factors, such as feeling supported by friends or associating with antisocial peers, are one of the most influential in youth development (Choi, Harachi, Gillmore, & Catalano, 2005; Dishion, Patterson, Stoolmiller, & Skinner, 1991) and have been found to impact mental health outcomes across racial/ethnic groups (Brown, 2004; Klineberg et al., 2006).

Group specific factors

Beyond the family process and peer constructs applied in most child development research, the family and social contexts may toll extra developmental challenges on AA children and adolescents (Garcia Coll et al., 1996). In this study, we considered two domains of constructs that may be group specific and highly relevant to AA families: cultural tensions in the family and circumstances surrounding racial/ethnic minority status. First, to consider cultural tensions within the family, the current study included intergenerational cultural conflict (ICC), gendered norms as exercised by parents, and parental implicit affection (thought to be typical of Asian parents in contrast to Western explicit affection). Second, for racial/ethnic minority status, we focused on acculturative demands and minority stress and included two aspects of social identity (American and ethnic identity) and perceived racial discrimination.

AA Family Process. ICC is one of the major stressors among AA young people and thought to be a product of the parent-child acculturation gap, i.e., discrepancy in language, identity, and cultural values and behaviors between parents and their children (Choi, He, & Harachi, 2008). Gendered norms are restrictions typically put on daughters and identified as a source of mental distress in AA family, particularly among AA females (Choi et al., 2020). Several qualitative interviews attest that gendered expectations, in particular the unequal care burden and more inhibitions placed on daughters, have caused distress among AA young women (Espiritu, 2003; Hahm, Gonyea, Chiao, & Koritsanszky, 2014). Conversely, parental implicit affection (i.e., parents’ putting child’s needs before theirs or indirect expression of love that often comes in the form of instrumental support) is a hallmark of AA family process and produces better mental health (Wu & Chao, 2005; Choi et al., In Press).

Racial/Ethnic Minority Status. Minority youth develop a national identity as Americans as they consider their role and position in the U.S. society (Phinney, Madden, & Santos, 1998). AA youth grow up American, as much as they identify themselves with their ethnic heritages (Choi, Park, Lee, Yasui, & Kim, 2018). Developing a strong American identity is equally important for minority youth because it provides a sense of belonging to a country in which they are growing up (Woo et al., In Press). In fact, being able to function well in both ethnic and dominant cultural norms (i.e., bicultural competence) is associated with stronger cognitive flexibility, more positive family relationships and better mental health (Wei et al., 2010). Ethnic identity has been also shown to be a protective factor for mental health among AAs in urban communities (Rivas-Drake, Hughes, & Way, 2008), although empirical findings are inconclusive (Ai, Nicdao, Appel, & Lee, 2015; Stein, Kiang, Supple, & Gonzalez, 2014). In contrast, detrimental effects of racial discrimination on a variety of developmental and health outcomes are unequivocal (Yip, 2015). Perceived discrimination reduces self-esteem, breeds hopelessness, builds up chronic stress, and increases morbidity (Gee, Spencer, Chen, Yip, & Takeuchi, 2007; Yip, 2015). Likewise, racial discrimination has been consistently shown to adversely influence developmental and mental health outcomes among AAs (Benner & Kim, 2009; Green, Way, & Pahl, 2006).

Present study

In this study, we first documented mental health outcomes of AA youth and young adults – specifically, depressive symptoms and suicidal

ideations – across three waves of data collected over a 4-year period between 2014 and 2018 and, second, identified several prominent explanatory variables. Specifically, using mixed effect regression models, we (1) examined the rate and trend of mental health outcomes over the waves, while accounting for baseline age (2) added the demographic variables of ethnicity, gender, nativity and family SES, (3) examined predictors organized by each cluster, respectively and then simultaneously, and (4) examined whether the impact of each predictor remains the same over the waves and is similar by ethnicity.

The current study focuses on the significance of family process and race/ethnic status that are thought to be specific to AAs. More specifically, our analyses focused on the extent to which such group specific factors exhibit *additional* power in explaining the study outcomes above and beyond the proportions of variance accounted for (among individual subjects and across time) by those universal family process and peer influences typically used in developmental research. Based on existing literature described above and our previous study on FA and KA youth (Choi et al., *In Press*), we predicted that both universal and group-specific factors would have a significant impact on mental health outcomes of AAs and that each cluster of the predictors would explain mental health outcomes, largely independently with modest overlaps. Moreover, based on developmental research (e.g., Hawkins et al., 1992), we expected that the magnitudes of the impact of family process variables (both universal and group specific) and peer influences on mental health would remain significant during the transition from youth to young adulthood. Due to a dearth of empirical studies that compare FA and KA youth, we did not generate hypotheses regarding how predictors would differently influence across our two samples. However, we anticipated that ethnic group differences would be mainly in the averages of the predictors but not in the associations between both universal and group specific predictors and mental health outcomes (Choi et al., 2020).

Methods

Overview of the project

Data for this study are derived from the Midwest Longitudinal Study of Asian American Families (MLSAAF) project, a longitudinal survey (3-wave panel data) of FA and KA youth and their parents living in a Midwest metropolitan area ($N = 1,574$ at Wave 1 in 2014; 378 FA youth, 376 FA parents, 408 KA youth and 412 KA parents). We followed all baseline participants in 2016 (78% retention) and youth participants in 2018 (82% of W1). In this study, data from youth surveys are used, $n = 786$ in W1, $n = 604$ in W2 and $n = 641$ in W3. In its initial data collection, all participants resided in four major counties near Chicago (i.e., Cook, Lake, DuPage and Will) and were recruited from multiple sources, including phonebooks, public and private schools, ethnic churches and temples, ethnic grocery stores, and ethnic community organizations. A proactive recruitment campaign continued to reach out to respective communities and organizations until the project reached its target numbers (at least 350 families for each subgroup).

At W1, the majority of participants (84%) were surveyed in-person by trained bilingual interviewers. For self-administered survey, the MLSAAF questionnaires were available both in paper-pencil and online-survey formats and in English, Tagalog and Korean. Data for Waves 2 and 3 were collected using self-administered questionnaires, either online or paper and in three language versions. More details about data collection and procedures are found elsewhere (Choi, Park, et al., 2018).

Sample characteristics

Descriptive statistics for demographic characteristics, predictors, and outcome variables across the three waves are shown in Table 1. At baseline (W1), the age range was from 11 to 19 years old (but mostly 12–17) and a larger proportion of the samples was enrolled in high

school (78.69% FA and 75.25% KA). Although overall similar, FAs were older (15.27 ($SD = 1.88$) vs. 14.76 ($SD = 1.91$)), more girls (56% vs. 47%), more American-born (71% vs. 58%) than KAs. Among foreign-born, the average year of living in the U.S. was 8 years. Unreported in Table 1, the baseline data showed that a large majority of parents were in mid-40s and currently married. Less than a quarter of the families have ever received free/reduced-price school lunch. Further parental data on education and household income confirmed that our samples are typical of FA and KA family characteristics as reported in the U.S. Census and other national studies such as the Add Health.

Measures

Mental health outcomes

Depressive symptoms were measured by using the Children's Depression Inventory (Angold, Costello, Messer, & Pickles, 1995) and the Seattle Personality Questionnaire for Children (Kusche, Greenberg, & Beilke, 1988). The scale items tap depressive mood as experienced during the last two weeks prior to the survey. Example questions included "I didn't enjoy anything at all" and "I felt I was a bad person." The scale showed strong reliability in all waves of survey (α ranging from .93 to .94 across waves for FA and from 0.93 to 0.94 for KA).

To measure suicidal ideations, participants were asked if they seriously have thought about committing suicide during the 12 months period prior to the survey. The response options were yes or no.

Explanatory variables

Universal Factors. Three aspects of family process were used. *Parent-Child Conflict* was assessed by using 4 items by Prinz (1977) that ask how often parent and child getting angry at each other, or the parent not listening to child's side of the story (α from 0.83 to 0.86 for FA and from 0.79 to 0.82 for KA); *Parent-Child Bonding* items were adopted from the Add Health, assessing the extent to which the child feels close to his/her mom and wants to be the kind of person s/he is at the time of survey (α from 0.88 to 0.93 for FA and from 0.85 to 0.92 for KA); and *Explicit Affection* used the 9 items from Rohner's (2004) Parental Acceptance and Rejection Questionnaires (PARQ) to assess the level of expressed, explicit affection. Examples included "My mom says nice things about me, lets me know she loves me" (α from 0.90 to 0.94 for FA and from 0.90 to 0.92 for KA).

In addition to the measures of family process, two scales measured peer influence. *Peer Relation* refers to the degree to which the respondent was confident they had close peer relationships. The variable was measured by using 3 questions (e.g., having close friends in school, or feeling lonely at school (reverse coded)) used in previous research (Asher & Wheeler, 1985). In this study, the scale showed modest reliability (α from 0.60 to 0.68 for FA and from 0.56 to 0.75 for KA). To assess *Peer Antisocial Behaviors*, a 7-item scale was adopted from the Raising Healthy Children (RHC) project (Catalano et al., 2003). Respondents were asked, for example, how many of their 10 closest friends have drunk alcohol, skipped school, or smoked marijuana or cigarettes, on a scale ranging from 1 (for none) to 5 (for most of them, 9–10 friends). The scale shows modest to good reliability in both FA and KA samples (α from 0.73 to 0.81 for FA and from 0.66 to 0.79 for KA).

Group-Specific Family Process Factors. *Intergenerational Cultural Conflict* (ICC) refers to the degree to which adolescents experience cultural gap from their parents being overly traditional, old fashioned or peculiar with respect to cultural norms. We adopt 10 items developed and used by Lee and his colleagues (Lee, Choe, Kim, & Ngo, 2000). Question items included, for example, "Your parents expect you to behave like a proper Filipino/Korean male or female, but you feel your parents are being too traditional." Reliability was very good (α from 0.89 to 0.92 for FA and from 0.85 to 0.89 for KA). The MLSAAF constructed a 7-item scale of *Gendered Norms* based on its own in-depth interviews with FA families and several qualitative studies (de Guzman, 2011; Espiritu, 2003; Nadal, 2011; Wolf, 1997). Specifically, youth were asked

Table 1
Descriptive statistics.

| Variables | Wave 1 | | | | Wave 2 | | | | Wave 3 | | | |
|--|--------------|--------------|--------------------|--------------|--------------|--------------|-------|--------------|--------------|--------------|-------|--------------|
| | FA | KA | Diff. ^a | Full Sample | FA | KA | Diff. | Full Sample | FA | KA | Diff. | Full Sample |
| | | | | | | | | | | | | |
| <i>Demographic Variables</i> | | | | | | | | | | | | |
| Ethnicity (%) | 378 (48.09%) | 408 (51.91%) | n.s. | 786 (100%) | 282 (46.23%) | 328 (53.77%) | n.s. | 610 (100%) | 308 (47.53%) | 340 (52.47%) | n.s. | 648 (100%) |
| Age | 15.27 (1.88) | 14.76 (1.91) | *** | 15.00 (1.91) | 16.71 (1.87) | 16.39 (1.85) | * | 16.54 (1.86) | 18.22 (1.84) | 17.91 (1.89) | * | 18.06 (1.87) |
| Female (%) | 213 (56.35%) | 193 (47.30%) | * | 406 (51.65%) | 165 (59.14%) | 154 (47.38%) | ** | 319 (52.81%) | 176 (57.89%) | 167 (49.55%) | * | 343 (53.51%) |
| U.S.-Born (%) | 269 (71.16%) | 237 (58.09%) | *** | 506 (64.38%) | 202 (72.40%) | 198 (60.92%) | ** | 400 (66.23%) | 223 (73.36%) | 201 (59.64%) | *** | 424 (66.15%) |
| Family SES | 3.10 (0.56) | 3.03 (0.7) | n.s. | 3.07 (0.64) | 3.00 (0.68) | 2.85 (0.76) | * | 2.92 (0.73) | 3.01 (0.70) | 2.79 (0.79) | *** | 2.89 (0.76) |
| <i>Universal Factors</i> | | | | | | | | | | | | |
| Parent-child Conflict | 2.44 (0.93) | 2.22 (0.79) | *** | 2.32 (0.86) | 2.63 (1.00) | 2.55 (0.94) | n.s. | 2.59 (0.97) | 2.61 (0.98) | 2.48 (0.89) | + | 2.54 (0.93) |
| Parent-child Bonding | 3.97 (0.76) | 4.01 (0.70) | n.s. | 3.99 (0.73) | 3.74 (0.95) | 3.73 (0.90) | n.s. | 3.74 (0.92) | 3.72 (1.00) | 3.80 (0.97) | n.s. | 3.76 (0.99) |
| Explicit Affection | 3.8 (0.80) | 3.76 (0.78) | n.s. | 3.78 (0.79) | 3.65 (0.93) | 3.6 (0.87) | n.s. | 3.62 (0.9) | 3.69 (0.93) | 3.67 (0.85) | n.s. | 3.68 (0.89) |
| Peer Relation | 4.44 (0.64) | 4.43 (0.64) | n.s. | 4.44 (0.64) | 4.22 (0.79) | 4.14 (0.85) | n.s. | 4.18 (0.82) | 3.49 (1.02) | 3.65 (0.95) | * | 3.57 (0.99) |
| Peer antisocial Behaviors | 1.36 (0.40) | 1.25 (0.3) | *** | 1.31 (0.35) | 1.48 (0.53) | 1.40 (0.53) | + | 1.44 (0.53) | 1.84 (0.72) | 1.61 (0.62) | *** | 1.72 (0.68) |
| <i>Group Specific Factors: AA Family Process</i> | | | | | | | | | | | | |
| ICC | 2.60 (0.91) | 2.37 (0.78) | *** | 2.48 (0.85) | 2.49 (1.04) | 2.27 (0.87) | ** | 2.37 (0.96) | 2.53 (1.03) | 2.19 (0.85) | ** | 2.35 (0.95) |
| Gendered Norms | 2.85 (0.85) | 2.65 (0.76) | ** | 2.75 (0.81) | 2.84 (0.83) | 2.65 (0.74) | ** | 2.74 (0.79) | 2.85 (0.85) | 2.64 (0.75) | ** | 2.74 (0.81) |
| Implicit Affection | 4.35 (0.72) | 4.27 (0.68) | n.s. | 4.31 (0.7) | 4.18 (0.83) | 4.19 (0.8) | n.s. | 4.19 (0.81) | 4.22 (0.81) | 4.26 (0.77) | n.s. | 4.24 (0.79) |
| <i>Group Specific Factors: Racial/Ethnic Minority Status</i> | | | | | | | | | | | | |
| American Identity | 3.86 (0.83) | 3.53 (0.82) | *** | 3.69 (0.84) | 3.75 (0.88) | 3.39 (0.88) | *** | 3.56 (0.9) | 3.72 (0.85) | 3.38 (0.88) | *** | 3.54 (0.88) |
| Ethnic Identity | 4.35 (0.64) | 4.15 (0.7) | *** | 4.25 (0.68) | 4.18 (0.8) | 4.02 (0.78) | * | 4.09 (0.8) | 4.21 (0.84) | 4.02 (0.76) | ** | 4.11 (0.81) |
| Racial Discrimination | 1.35 (0.48) | 1.49 (0.52) | *** | 1.43 (0.51) | 1.41 (0.57) | 1.54 (0.67) | ** | 1.48 (0.63) | 1.50 (0.60) | 1.65 (0.68) | ** | 1.58 (0.65) |
| <i>Mental Health Outcomes</i> | | | | | | | | | | | | |
| Suicidal Ideation | 38 (10.30%) | 38 (9.48%) | n.s. | 76 (9.87%) | 35 (12.50%) | 41 (12.69%) | n.s. | 76 (12.60%) | 49 (16.17%) | 55 (16.37%) | n.s. | 104 (16.28%) |
| Depressive Symptoms | 1.81 (0.76) | 1.81 (0.73) | n.s. | 1.81 (0.74) | 1.89 (0.81) | 1.97 (0.84) | n.s. | 1.93 (0.83) | 2.10 (0.82) | 2.17 (0.84) | n.s. | 2.14 (0.83) |

****p* < 0.001; ***p* < 0.01; **p* < 0.05.

Note. Means (Standard Deviations) for continuous variables or sample numbers (proportions in %) for categorical variables.

^a Statistical differences between FA and KA.

Table 2
Mixed effect models of depressive symptoms and suicidal ideation.

| Predictors | Depressive Symptoms | Suicidal Ideation |
|------------------------|--------------------------|--------------------------|
| | b (SE ^a) | b (OR ^a) |
| Waves (0, 1, 2) | 0.72*** (0.13) | 1.67 ⁺ (5.30) |
| Baseline age | 0.08*** (0.01) | 0.09 (1.10) |
| Wave × Baseline age | -0.04*** (0.01) | -0.08 (0.92) |
| Ethnicity (KA = 1) | 0.08 ⁺ (0.05) | -0.01 (0.99) |
| Gender (Female = 1) | 0.29*** (0.05) | 0.86*** (2.36) |
| Nativity (US Born = 1) | 0.09 ⁺ (0.05) | 0.16 (1.17) |
| Family SES | -0.11*** (0.03) | -0.39** (0.68) |
| Constant | 0.42 ⁺ (0.22) | -5.49*** (0.00) |
| Observations | 1,978 | 1,965 |
| N of Individuals | 775 | 775 |
| Intraclass correlation | .45 | .57 |

***p < 0.001; **p < 0.01; *p < 0.05.

^a SE is standard error; OR Odd Ratio.

about their parents' perception of gendered norms, e.g., "My parents think that girls should not date while in high school." Reliability was good ($\alpha = 0.81$ for Filipinos and .78 for Koreans). This scale was used only in W1. *Implicit Affection* was measured by 2 items from [Lisman, Wu, and Chao \(2001\)](#), e.g., "My mom puts my needs before her own needs," "My mom does not often say it but does things that show me she loves me." (α from 0.46 to 0.66 for FA and from 0.56 to 0.58 for KA).

Group-Specific Race/Ethnic Minority Status Factors. *American Identity* and *Ethnic Identity* scales were adopted from the Language, Identity, and Behavior (LIB) ([Birman & Trickett, 2002](#)), two sets of five parallel items measured the extent to which youth identified themselves as American or Filipino/Korean. Reliability ranged from 0.76 to 0.83 in samples across the waves. *Racial Discrimination* included 5 items from the MLSAAF project and the [Phinney et al. \(1998\)](#), assessing the frequency of being unfairly treated because of being FA or KA. Examples items included "I have felt discriminated by whites," "by other Asians," or "by other racial/ethnic minorities like Black or Hispanic." (α from 0.74 to 0.83 for FA and from 0.75 to 0.85 for KA).

Analysis steps

To estimate rates and longitudinal changes of the mental health

Table 3
Mixed effect models of depressive symptoms.

| Clusters and Predictors | Model for Universal Factors | Model for Group Specific Family Process | Model for Racial/Ethnic Minority Status | Saturated Model |
|--|-----------------------------|---|---|-----------------|
| | b (SE ^a) | b (SE) | b (SE) | b (SE) |
| <i>Universal Factors</i> | | | | |
| Parent-child conflict | 0.15*** (0.02) | | | 0.08*** (0.02) |
| Parent-child bonding | -0.14*** (0.03) | | | -0.12*** (0.03) |
| Parental explicit affection | -0.06* (0.03) | | | -0.01 (0.03) |
| Peer relation | -0.20*** (0.02) | | | -0.16*** (0.02) |
| Peer antisocial behaviors | 0.09** (0.03) | | | 0.04 (0.03) |
| <i>Group Specific Factors: AA Family Process</i> | | | | |
| Intergenerational cultural conflict | | 0.27*** (0.02) | | 0.15*** (0.02) |
| Gendered norms | | 0.01 (0.03) | | 0.02 (0.02) |
| Implicit affection | | -0.08*** (0.02) | | 0.02 (0.02) |
| <i>Group Specific Factors: Racial/Ethnic Minority Status</i> | | | | |
| American identity | | | -0.08*** (0.02) | -0.05* (0.02) |
| Ethnic identity | | | -0.13*** (0.02) | -0.09*** (0.02) |
| Racial discrimination | | | 0.31*** (0.03) | 0.18*** (0.03) |
| Constant | 1.00*** (0.19) | 0.44* (0.20) | 0.63** (0.02) | 0.92*** (0.02) |
| Observations | 1,947 | 1,959 | 1,962 | 1,928 |
| N of Individuals | 773 | 774 | 773 | 771 |
| Intraclass correlation | .35 | .39 | .38 | .30 |

***p < 0.001; **p < 0.01; *p < 0.05.

The models were adjusted for controls (shown in [Table 2](#)) but the coefficients are not reported.

^a SE standard error.

outcomes, mixed effect linear regression models (for depressive symptoms) and mixed effect logistic regression models (for suicidal ideation) were estimated. Using STATA v.15.1, regression models included both fixed effects of predictors and random effects of individual variance around the sample parameters. The predictors may be time-variant (e.g., peer relation or ethnic identity) or invariant (e.g., gender or ethnicity). Two modeling methods were considered, i.e. random intercept modeling that allows individuals to have varying level of outcomes at the baseline and random intercept and trend modeling that additionally estimates individual variances in rates of change in outcome measures. We ran both modeling methods for each outcome and used the likelihood ratio (LR) test to examine significant fit increments between these two models. The LR test results were that random intercept and trend modeling showed significant fit increments with the depressive symptoms outcome but did not converge properly with the suicidal ideation outcome. Accordingly, random intercept and trend modeling was used with depressive symptoms and random intercept modeling was with suicidal ideations.

As the first step, unadjusted rates of mental health over three waves were examined by ethnicity and the full sample. In the second step, mixed effects regression models were run on respective outcome, adjusted for the demographic controls. In the subsequent regression models, each of three clusters (i.e., universal, AA family process and racial/ethnic minority status factors) was initially run individually along with the controls. In the final saturated models, all clusters were regressed together. Mixed effects modeling does not generate R-squared. Accordingly, we used and reported Intraclass Correlation to show the proportion of (unexplained) variance of outcome measures at the subject level (i.e., level-2 in longitudinal data format) ([Hedeker & Gibbons, 2006](#)). Interaction terms (predictor × wave and predictor × ethnicity) were added to the saturated model, one term at a time, to examine whether the magnitude of the predictors changed over time and varied by ethnicity. The rate of missing data was less than 3% in W1 and W2, and less than 2% in W3, which did not warrant missing data imputations.

Table 4
Mixed effect models for suicidal ideations.

| Clusters and Predictors | Model for Universal Factors | Model for AA Family Process | Model for Racial/Ethnic Minority Status | Saturated Model |
|--|-----------------------------|-----------------------------|---|-----------------|
| | b (OR ^a) | b (OR) | b (OR) | b (OR) |
| <i>Universal Factors</i> | | | | |
| Parent-child conflict | 0.20 (1.22) | | | -0.02 (0.98) |
| Parent-child bonding | -0.35* (0.71) | | | -0.25 (0.78) |
| Parental explicit affection | -0.20 (0.82) | | | 0.01 (1.01) |
| Peer relation | -0.45*** (0.64) | | | -0.32** (0.73) |
| Peer antisocial behaviors | 0.43* (1.54) | | | 0.21 (1.23) |
| <i>Group Specific Factors: AA Family Process</i> | | | | |
| Intergenerational Cultural Conflict | | 0.78*** (2.19) | | 0.57*** (1.76) |
| Gendered norms | | -0.24 (0.78) | | -0.21 (0.81) |
| Implicit affection | | -0.34** (0.71) | | -0.12 (0.89) |
| <i>Group Specific Factors: Racial/Ethnic Minority Status</i> | | | | |
| American identity | | | -0.13 (0.88) | -0.08 (0.93) |
| Ethnic identity | | | -0.68*** (0.51) | -0.53*** (0.59) |
| Racial discrimination | | | 0.96*** (2.61) | 0.62*** (1.85) |
| Constant | -3.70** (0.02) | -5.18*** (0.01) | -4.55** (0.01) | -3.87** (0.02) |
| Observations | 1,933 | 1,946 | 1,949 | 1,914 |
| N of Individuals | 773 | 774 | 773 | 771 |
| Intraclass correlation | .47 | .53 | .52 | .48 |

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

The models were adjusted for controls (shown in Table 2) but the coefficients are not reported.

^a OR Odd Ratio.

Results

Rates & changes over time in mental health problems

Overall, mental health problems increased over the 4 years of data collection period. Specifically, as shown in Table 1 at the bottom rows, unadjusted means of depressive symptoms increased steadily from 1.81 ($SD = 0.74$) in W1, 1.93 ($SD = 0.83$) in W2, to 2.14 ($SD = 0.83$) in W3. Similarly, unadjusted proportion of suicidal ideation increased, and substantially, from 9.67% in W1, 12.46% in W2 to 16.05% in W3. The upward trajectories of mental health problems were consistent in both ethnic subgroups. The descriptive statistics of the study variables are reported in Table 1, examined at each wave and by ethnicity and full sample.

In Table 2, results of mixed effect regression models adjusted for the controls are presented. Controlling for the effects of demographics, wave (0, 1, 2) was associated significantly and positively ($b = 0.72, p < .001$) with depressive symptoms indicating a statistically significant increase of depressive symptoms over time, controlling for the demographics. Given the age range of 11–19 of the baseline data, we added an interaction term of wave \times age to account for the age effect within the sample. We found a significant effect ($b = -0.04, p < .001$), suggesting a lower rate of increase in depressive symptoms among older respondents than younger respondents. Similar results are found on suicidal ideation. Wave was significantly associated with the odds of having suicidal ideations during the past 12 months ($OR = 5.30, p < .001$), showing a statistically significant, notably drastic increase in suicidal ideations during the period of data collection, adjusted for the demographics. The rate of increase in odds across waves was also more pronounced among younger than older respondents.

Mixed effect linear regression: Depressive symptoms

Universal Factors

The mixed effect models shown in Table 2 were extended to include universal and group specific factors as predictors with results displayed in Table 3. As expected, all universal factors (the family process and peer influence variables) were significantly related to the level of depressive symptoms in expected directions. Specifically, parent-child conflict ($b =$

$0.15, p < .001$) and antisocial behaviors among peers ($b = 0.09, p < .01$) were related to higher symptoms, while parent-child bonding ($b = -0.14, p < .001$), parental explicit affect ($b = -0.06, p < .05$) and positive peer relations ($b = -0.20, p < .001$) were associated with lower symptom levels.

Group specific factors

Of the three AA family process variables, ICC ($b = .27, p < .001$) and implicit affection ($b = -0.08, p < .001$) had significant associations with depressive symptoms, also in expected directions. The coefficient of gendered norms was not significant ($p > .05$), although it was positively correlated with depressive symptom in bivariate analysis ($r = 0.12, p < .001$). All three racial/ethnic minority status variables (ethnic identity $b = -0.13, p < .001$, American identity $b = -0.08, p < .001$, and discrimination $b = 0.31, p < .001$) were significantly related to depression in expected directions.

Saturated models

Main Effects. In the saturated model (summarized in the last column in Table 3), all predictors were estimated simultaneously, controlling for the demographics. Three of the five universal factors (parent-child conflict $b = 0.08, p < .001$, parent-child bonding $b = -0.12, p < .001$, and peer relations $b = -0.16, p < .001$) remained significant, while parental explicit affect and peer antisocial behavior were no longer related significantly to depressive symptoms. Regarding the group-specific AA family process factors, only ICC ($b = 0.15, p < .001$) remained significant in the saturated model. Results on the racial/ethnic minority status variables (American identity $b = -0.05, p < .05$, ethnic identity $b = -0.09, p < .001$ and racial discrimination $b = -0.18, p < .001$) were affected little, except a slight reduction in size of the coefficients.

Interaction Effects. Inspection of the interaction terms between each of the 11 predictors and wave (not shown in table) demonstrated that the effects of the predictors on depressive symptoms as shown in the saturated model (Table 3) were consistent across waves, with one exception of the protective effect of peer relations. The beneficial influence of peers relations was strong and significant at W1 ($b = -0.29, p < .001$), marginally increased from W1 to W2 ($b = -0.32, p < .001$), but eventually became none-significant at W3 ($b = -0.03, p > .1$).

Two of the predictor \times ethnicity interaction terms was statistically significant at $p < .05$ level. First, ICC was a positive and stronger predictor for FA ($b = 0.21, p < .001$) than for KA youth ($b = 0.07, p < .05$), which was also statistically significant. Second, the coefficients of parental explicit affection differed by ethnicity but were not statistically significant in either group.

Mixed effect logit regression: Suicidal ideation

Universal Factors

Results of the mixed effect logit regression models of suicidal ideation are reported in Table 4. Of the universal factors, parent-child bonding ($OR = 0.71, p < .05$) and peer relations ($OR = 0.64, p < .001$) were related to the lower probability of having suicidal ideation, while peer antisocial behaviors ($OR = 1.54, p < .05$) were significantly associated with higher probability of having suicidal ideation.

Group specific factors

Similar to the results of depressive symptoms, ICC ($OR = 2.19, p < .001$) and implicit affection ($OR = 0.71, p < .01$) were significantly related to the odds of suicidal ideation in expected directions. Of racial/ethnic minority status factors, American identity was not significant, whereas ethnic identity ($OR = 0.51, p < .001$) showed a significant effect in reducing suicidal ideation. Racial discrimination had a noticeably large and adverse effect on suicidal ideation ($OR = 2.61, p < .001$).

Saturated models

Main Effects. The saturated model shows that of the universal factors, parent-child bonding and peer antisocial behaviors were no longer statistically significant and only peer relations remained significant to lower odds of having suicidal ideations ($OR = 0.73, p < .01$). Three group specific variables remained significant. That is, ICC ($OR = 1.76, p < .001$), ethnic identity ($OR = 0.59, p < .001$), and racial discrimination ($OR = 1.85, p < .001$) were statistically significant in the final saturated model in expected directions.

Interaction Effects. None of the interactions of predictor by wave was statistically significant in the saturated model of suicidal ideation. The interaction terms of predictor \times ethnicity indicated that ethnic identity was a significant and negative predictor of suicidal ideation only among KA youth ($OR = 0.42, p < .001$).

Discussion

This study provides unique and much needed longitudinal data on mental health outcomes among AA young people during the developmental transition from adolescence to young adulthood. At the time of initial (baseline) survey in 2014, most of the youth participants were in early-to mid-adolescence (12–17 years of age). By W3 in 2018, they were in either late adolescence or emerging adulthood. Within this context, our data substantiated a troubling upward trend in mental health struggles among young AAs during the transition. Adjusting demographic controls did not change the pattern. Moreover, this study shows that mental health problems among AA young people have not only increased but also became more serious in severity as noted by the substantial increase in suicidal ideation (9.87% to 16.28%). In fact, 22% of 18 and 19 year old youth in W3 reported suicidal ideation, twice as many as the national average of 11% among the same age group in 2017 (Substance Abuse & Mental Health Data Archive, 2017), revealing an alarming public health concern. Finally, this study demonstrates that these trends are shared by FA and KA samples.

With respect to the etiology of mental distress and its significant increases, our results from the mixed effect regression models confirmed the validity of the universal family process and peer influences. We found that the quality of parent-child relations as well as peer influences all had unique and independent associations with the level of depressive symptoms, controlling for gender, age, family SES, and the place of birth

of participants. Parent-child bonding and conflict and peer relations, in particular, remained robust for depressive symptoms when group-specific factors were estimated together. We also found that peer relations seem to exert greater influence on suicidal ideation. Thus, data of this study suggest that parent-child relations and expressed affection in AA families matters importantly for internalizing distress such as depressive mood symptoms from adolescence through emerging adulthood but that they may not be as powerful for extreme conditions such as suicidal thoughts. Among AA youth samples, universal factors are seldom tested separately from group specific factors for their predictive roles in AA youth outcomes. This study underscores the extensive role of universal factors, notably in AA depressive symptoms, and lays the groundwork for future research in this area.

A central motive of this study was to examine the additive, complementary contributions of group (or culture) specific factors to accounting for variances in depression and suicidal ideation, above and beyond the variances accounted for by the universal family factors and peer influences. These factors were grouped into AA family process factors and those relevant to racial/ethnic minority status. We find that the group specific factors were complementary. That is, effects of universal and group specific factors on outcomes were unique and additive, so that the addition of group specific factors into the model caused little changes on the significance of universal factors. In our view, to explain the elevated vulnerability of mental distress among AA youth, it is pivotal for research of AA families and children to identify and integrate culture- and context-specific constructs in addition to conventional measures of family process and peer relation. This process requires firm theoretical specifications and empirical supports of cultural traits and social and historical contexts of ethnic groups under investigation. This study is one of the early endeavors.

In analyses, we considered three group specific AA family factors – ICC, gendered norms, implicit affection, and found that ICC made considerable contributions to accounted variances in depressive symptoms and suicidal ideation. Indeed, it was the only one of the three AA family process factors considered that was related to the outcomes after all other clusters of predictors were estimated together in the final saturated models. ICC has been cited as one of the major stressors among AA youth who are referred to mental health services (Lee et al., 2017). While all American families may go through cultural transitions and experience generational gap in values and norms, AA families may encounter additional conflict from the disparity between traditional Asian and American cultures. Results of this study confirm that ICC does play an important etiological role with respect to depression and suicidal ideations among AA adolescents and young adults. Relatedly, although parental gendered norms were not a significant predictor of mental distress in multivariate regressions of this study, they were a significant and positive correlate of mental health problems. Gendered norms emerged as one of the major sources of strain and ICC in several focus groups conducted with FA and KA youth (Choi, Park, et al., 2017) and was a significant predictor of mental distress when estimated without ICC (Choi et al., 2020). Moreover, gendered norms were available only in W1 and with additional data, we might have found a significant association. Thus, despite its insignificant association in this study, the importance of gendered norms in AA family should not be dismissed. Implicit affection was a significant protective factor of mental distress among AA youth. However, when parent-child bonding and explicit affection are accounted together, it was no longer significant. This may suggest a possible mediation mechanism, in which parental explicit and implicit affections increase parent-child bonding that can help AA mental health. It is plausible that implicit affection may exert its positive influence indirectly by fostering positive parent-child relation. Indeed, a recent study highlighted the benefit of implicit affection in enhancing mental health and improving academic performance among FA and KA youth (Choi et al., In Press).

Of the group specific factors, explanatory powers of racial/ethnic minority status factors were highlighted in this study. The significant

roles of racial/ethnic status variables changed little when other clusters were accounted for, thus were independent of family and peer contexts. Consistent with the bicultural model of acculturation (Berry, 1997), both American and ethnic identities appeared to be critical resources suppressing depressive symptoms, and ethnic identity for both mental health outcomes. Ethnic identity, in particular, has been investigated intensively with respect to its direct contribution to psychological and developmental outcomes, and as a moderator that buffer adverse consequences of stressful life conditions and of experiences of social exclusion (Shelton et al., 2005; Smith & Silva, 2011). The results of this study suggest that as it reduced general depressive mood, ethnic identity may help minority adolescents remain hopeful in the midst of severe distress and avoid drastic thoughts. On the contrary, American identity does not seem to be as beneficial in fighting severely distressing thoughts that are most likely to have social origins such as systematic exclusion and marginalization of AAs. Our findings call for systematic investigations to ascertain determinants of ethnic identity.

As well, the findings of this study extend a line of empirical research on etiological salience of discrimination, i.e., its pernicious impact on mental health (e.g., Yip, 2015; Yip, Gee, & Takeuchi, 2008) and particularly in exacerbating serious mental distress. Furthermore, few studies examined the role of discrimination in combination with family process and peer factors among AA youth. In addition, to our knowledge, this study is the first, or among few, that considered discrimination and suicidal ideation using longitudinal data from adolescents of racial minority communities in the U.S. It should be noted that the period that this data collection occurred coincides with the documented surge of racist and anti-immigrant sentiment (Federal Bureau of Investigation, 2017), which is consistent with youth report of perceive racial discrimination that may have exacerbated mental health vulnerabilities among the study sample.

When we inspected the interaction terms to evaluate changes in the predictive impact of each predictor on mental health outcomes, we found that the statistical significance of most predictors did not change and were consistent across the three waves of survey. One exception was a diminished impact of peer relations on depressive symptoms, although its impact on suicidal ideation remained significant over the transition into adulthood. The diminishing role of peers on depressive symptoms was unexpected. It may be that as AA adolescents complete high school and begin more independent living in college or in job market, the nature of contributing etiological processes may shift away from immediate peer relations to more diverse and complex social interactions. The findings may also indicate a particular significance of family or an elevation of risk in other aspects among young AAs. For example, parent-child conflict and perceived racial discrimination significantly increased from W1 to W3, while positive peer relations declined. Leaving the family home during emerging adulthood is expected to result in more freedom, less parent-child daily conflict, and better parent-child relations (Dubas & Petersen, 1996; O'Conner, Allen, Bell, & Hauser, 1996; Shaver, Furman, & Buhrmester, 1985). This study shows that it may not be the case for AA late adolescents and young adults. In addition to increases of parent-child conflict, its impact remains significant. It may be due to Asian collectivism that expects grown-up children to maintain interdependence and fulfill their family obligations (Kagitcibasi, 2007), which may be amplified in the process of deciding on a higher education or a career.

Overall, results were more similar than different between FA and KA youth. However, a few important distinctions remain. ICC was stronger for FA. Moreover, both ICC and parent-child conflict were significantly higher among FA than KA in all three waves. This may suggest that in addition to higher conflicts in the FA families, FA youth are more influenced by parent-child relations; further analysis is needed to determine its correlates with a stronger emphasis on the centrality of family among FAs, compared to KAs, found in previous studies (Choi, Kim, et al., 2018). Finally, although the rates of ethnic identity were significantly higher among FAs than KAs in this study, ethnic identity

was a stronger protective factor of suicidal ideation for KA youth versus FA youth. KA communities are tightly-knit, demonstrating higher rates of ethnic segregation and language retention than FA communities (Min, 2008). It is plausible that a strong ethnic community facilitates the buffering effect of ethnic identity more so than growing up in a more integrated community. Still, ethnic identity was a protective factor for depressive symptoms for both groups, demonstrating its value in both groups. As these interactions were for exploratory purposes, these differences merit further research into causalities and implications for clinical interventions.

Some studies reported that FA youth, especially females, have a significantly higher rate of mental distress (David, 2010), while others showed equally high mental health problems among KA and FA (Kim, Park, Storr, Tran, & Juon, 2015). The present study found that the rates of mental health distress are comparable across FA and KA young people, although FA girls did report the highest rate of depressive symptoms in W2. Some of the inconsistency in the reports may be due to differences in sampling strategies utilized, targeted developmental period or timing of the data collection. The Add Health, first collected in 1994, was a school-based, nationally representative survey likely to have included a wide variance of FA youth. The MLSAAF, from which this study used the data, started in 2014 and was a regional study with limited variance among its participants; FA parents in particular expressed reluctance to consent when they supposed that the survey would cast a negative image of FA youth. Survey is collected only from willing participants and families whose children struggle are less likely to consent to participate. Likewise, it is plausible that FA parents of children with difficulties such as mental distress may have deferred from participating and if FA girls indeed have more problems, FA families with daughters might have been less willing to participate.

A few limitations of the study should be mentioned. First, although parental demographic characteristics of this study's samples are comparable to those of national data, the generalizability of this study remains limited. Relatedly, caution is advised in applying the study findings to other AA subgroups than FAs and KAs. Moreover, measurements of a few constructs are new and had a less than ideal reliability, e.g., implicit affection. Nevertheless, these relatively new scales have been used in recent studies (e.g., Choi, Kim, Pekelnicky, Kim, & Kim, 2017; Choi et al., 2020) and have provided important information. With an improved quality, these measures could have shown additional significant or stronger associations.

Notwithstanding these limitations, the major contributions of this study include the large-scale community samples as well as the longitudinal design. The study fills a gap in the literature in which studies solely examine a single time frame and clarifies how the rates of negative mental health outcomes change over time among AAs during the transition from early adolescence to emerging adulthood. Much less is known about the relative roles of family and peers in an immigrant context. This study also demonstrated how the nuanced experiences and cultural processes of AA subgroups could lead to this mental health trend and, in order for appropriate and effective public health interventions to be done, these nuances and specificities must be thoroughly understood.

Implications and future directions

The question of how culturally-specific variables and universal phenomena affect young AAs is especially urgent given the documented tendency of such youth to mask detrimental internalizing behaviors with academic achievement and low externalized behaviors (Choi et al., In Press). This study provides a comprehensive view of both universal and culturally-specific predictors over several waves, and finds that ICC and racial discrimination may be key risk factors while ethnic identity serves as a protective factor of mental health.

Clinical interventions can implement this research through a family systems approach that targets ICC and parent-child conflict. Further, racial discrimination should be acknowledged as a notable stressor for

AA youth. Due to a complicated combination of racial/ethnic stereotypes including the popular model minority stereotype and the perpetual foreigner stereotype in which AAs are regarded as a foreigner regardless of nativity and years of residence in the U.S. (Tuan, 1998; Yoo, Yip, & Miller, 2015), AAs are rarely part of the national discourse around recent reports of surging racist and anti-immigration sentiments. Yet, AAs have been disproportionately targeted by racist actions. For example, racist and anti-immigrant hate crimes targeting AAs across the nation hiked 20% between 2016 and 2017 more than for any other major racial/ethnic groups in the U.S. (Federal Bureau of Investigation, 2017). This troubling trend and accumulating evidence for the detrimental effect of racial discrimination on AA mental health calls for appropriate responses in terms of policy, clinical interventions, and family education.

For example, congruent with a critical race perspective, Juang, Yoo, and Atkins (2017) urge an increased “critical awareness” of AA history and heritage culture history, White racism, racial inequity in institutions and society. Most importantly, they suggest how parents can help translate what critical awareness means for youth personally (“reflection”) and how they might encourage youth to actively resist inequitable systems (“activism”), as a way to combat racism and racial discrimination.

Ethnic identity, despite some mixed reports on its role on youth development, is an important protective factor to mental health among AAs. Several studies have shown its mitigating effect and particularly the buffering role it plays with respect to racial discrimination. Culturally competent clinical interventions will take into account the salutary effects of a strong ethnic identity. However, current research is limited to offer effective methods of building and enhancing healthy sense of ethnic identity. We recommend systematic research on familial and social determinants of ethnic identity, especially the sense of pride and esteem in ethnic roots and heritage, possibly through an effective ethnic/racial socialization in the family (Juang et al., 2018). Considering the drastically increased rates of suicidal ideation in W3 and the sustained significance of ICC, ethnic identity and racial discrimination in suicidal ideations, there seems to be an urgent need to determine both positive and negative etiology of mental distress, especially suicidal thoughts and attempts, among those entering emerging adulthood and how family, peer and society together can mitigate this serious vulnerability.

Ethical statement

The study was conducted in accordance with the ethical standards, approved by the University of Chicago IRB.

CRedit authorship contribution statement

Yoonsun Choi: Writing - original draft, Conceptualization, Methodology, Investigation, Funding acquisition. **Michael Park:** Writing - original draft, Formal analysis. **Samuel Noh:** Writing - original draft, Conceptualization, Funding acquisition. **Jeanette Park Lee:** Writing - original draft. **David Takeuchi:** Conceptualization, Funding acquisition.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssmph.2020.100542>.

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