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Aruna Jha

Manik Ahuja

Rajvi J. Wani

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Suicide Among South Asians in the United States: A Growing Public Health Problem

Aruna Jha[1], Manik Ahuja[2], and Rajvi J. Wani[3]

Abstract

This research study quantifies and describes suicide among South Asian Americans (SAAs), an emerging population that are underrepresented group in suicide research. The purpose of this study was to examine key characteristics of suicide deaths among SAAs. Data were employed from DuPage County, IL, a county with a large SAA population. Following federal recommendations for disaggregating Asian American data at a granular level, four SAA researchers used name recognition to identify all SAA cases classified as suicide in the DuPage County coroner's database from 2001 to 2017 ($N = 38$). Coroner's reports were analyzed for contextual details and correlating factors specific to each suicide. Overall, 76.3% of victims were male and 45.0% were married. An analysis of the coroner reports established that 71.1% of decedents showed behavioral disorders that were predisposing risk factors for suicide including mental health diagnoses (57.9%), and a reported prior suicide attempt (21.1%). Among these decedents only 34.2% had received any prior psychiatric care. Significant errors in racial classification of SAAs, lead to a gross undercount of SAA deaths by suicide with 55% of South Asian suicides assigned to a different race or ethnic group. Future studies must increase the scope of this research to other geographic locations with high concentrations of SAAs and examine the risk factors for suicide among SAAs, one of the fastest growing ethnic populations in the U.S.

Keywords

suicide, South Asian suicide, South Asian American, acculturation, mental health

Content warning statement: This article contains content that should be treated as sensitive as it discusses suicide and suicidal ideation. We believe this research makes a valuable contribution to the academic record and we encourage our readers use appropriate care when choosing how to read and share it.

Background

There are approximately 3.4 million South Asians living in the United States, as they are one of fastest growing ethnic populations in the US (Hedegaard, 2018; Mukherjea et al., 2018). This ethnic group includes individuals who trace their ancestry to Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka. Suicide is a growing public health concern among the community, and a topic that has been vastly understudied. Recent deaths by suicide of well- known celebrities of South Asian decent (e.g., Sushant Singh Rajpur and Sejal Sharma) have started conversations within the community and raised awareness of this growing public health problem (Kar, 2020). Yet, overall, mental health disorders remain highly stigmatized among South Asians (Kishore et al., 2011). South Asian cultures have traditionally not utilized mental health services and many of the immigrants from these countries may have little to no understanding of mental illness. South Asians are less likely to seek outside intervention or counseling due to cultural stigma and often refrain from sharing problems with mental health providers (Conrad & Pacquiao, 2005, Kreps, 2017). This puts South Asians at risk for internalizing behaviors, which are a risk factor

[1]University of Wisconsin-Whitewater, USA
[2]East Tennessee State University, Johnson City, USA
[3]University of Nebraska Medical Center, Omaha, USA

Corresponding Author:
Manik Ahuja, Department of Health Services Management and Policy, East Tennessee State University, 41B Lamb Hall, Johnson City, TN 37614, USA.
Email: ahujam@etsu.edu

for anxiety, depression (Tandon et al., 2009), and might lead to suicidal thoughts and behavior.

Risk Factors

One of the most frequently cited risk factors for suicidal ideation and behaviors is acculturative stress. Because a large percentage of the South Asian community in the U.S. is foreign born, adjustment to the norms and values of the dominant culture may be stressful and related to depression and suicide (Leong et al., 2013). Prior research suggests the clash of two cultures creates stress among adolescents and young adults (Inman, 2007). Jha (2001) documented four different sources of acculturative stress, namely social, attitudinal, familial, and environmental. Of these, family stress (often described within a context of parental pressure to maintain cultural values and identity while simultaneously needing to develop an American identity), was a major trigger for suicidal ideation in Indian American college students. A recent study (Nath et al., 2018) found that South Asian Americans (SAA) with higher education scored lower on the Reasons for Living inventory, a robust measure of protection against suicide, as did those who were younger, had lower incomes, or were immigrants from India. The authors concluded that their findings were consistent with U.K-based studies. Additionally, barriers to mental health service utilization, and stigmas associated with mental health impact SAAs (Karasz et al., 2019) (It is also common for South Asian immigrants to have low adherence of mental health treatment regimens, which are often seen as unnecessary Nazroo, 1998), and experience stigmas for seeking treatment (Hurwitz et al., 2006; Karasz et al., 2019).

The true prevalence of suicides among specific Asian American subgroups, such as the emerging South Asian American community, is not known (Lane et al., 2016). Anecdotal evidence and ethnic newspaper articles (Elias, 2015) report that South Asian adolescents and young adults in the US are at an elevated risk for mental health disorders, along with suicide thoughts, behavior, and many incidents of completed suicides. The probability of racial misclassification and systematic undercount in federal data underscores the need for examining suicide in South Asian Americans. Rates of major mental disorders in a community sample have not been examined for South Asian Americans (Masood et al., 2009) and the scant US research that exists does not adequately address suicide, suicidal behaviors, or mental health disorders associated with suicide risk. Masood et al. (2009) cites the growing perception among South Asian American community leaders that mental health problems within the community are going untreated as there are few mental health services that meet their communities' needs. Recent newspaper reports (NBCNews.com, 2019) and anecdotal evidence (Northwest Asian Weekly, 2019) show that South Asians in the US may be at an elevated risk for mental health disorders, along with suicide thoughts, behavior, and many incidents of completed suicides. Authors also caution that several suicides among South Asians adolescents and young adults have been overlooked or not made public due to privacy and the social stigma associated with suicides (Radhakrishnan & Andrade, 2012).

South Asian cultures have traditionally not utilized mental health services and many of the immigrants from these countries may have little to no understanding of mental illness. Additionally, there is a stigma of mental health in South Asian cultures that has harmful effects on individuals (Kishore et al., 2011). Consequently, South Asians are less likely to seek outside intervention or counseling due to cultural stigma. Driven by the tradition of keeping family matters private (Sharma, 2000), South Asian Americans refrain from sharing problems with outsiders, including mental health providers (Conrad & Pacquiao, 2005, Kreps, 2017). As can be seen, due to these beliefs regarding mental illness, accessing mental health services does not come easily to South Asian Americans and may be a barrier to timely suicide prevention. The purpose of the current study is to examine key characteristics of completed suicides among a sample of South Asian American descendants in an Illinois county. Moreover, this study aimed to assess the distribution of premediated versus impulsive suicides among South Asian Americans by method of death and living arrangement.

Method

Sample and Procedure

This study is based on coroner's report of death records of 38 (29 males and 9 females) South Asian Americans (SAA) who died by suicide in Du Page County, IL, during the years 2001 to 2017. The subjects ranged in age from 16 to 71 years ($M = 44.2$ years, $SD = 17.2$). We examined familial and individual-level risk factors that may have contributed to the deaths by suicide.

Most South Asians have distinctive names and name identification has been used successfully to validate South Asian ethnicity among participants in medical research in the UK (Nisch et al., 2009). All members of the research team are of South Asian descent, from different parts of the Indian sub-continent, and hence familiar with South Asian first and last names and the

common contexts of suicide in this community. A multi-step process ensured adherence to HIPAA rules of confidentiality and achieved consensus on the cases selected for this study. We describe each of the steps below:

Step 1: Here we describe the process by which we reviewed and selected assumed SAA decedents based on their unique SAA names from a master list of suicide decedents' names provided by the coroner's office. With permission of the coroner, the first author (AJ) acquired the names of all individuals that died by suicide in the years 2001 to 2017 in Du Page County, IL. First and last names were used to select 41 cases from these lists. The coroner's staff printed hard copies of the coroner's final reports, redacted the identifiers such as name, address, and family members' names using black permanent markers and converted the records into pdf format. We received these redacted records as secure email attachments with no possibility of specific names being connected to any of the records. The original South Asian name list was destroyed.

Step 2: We achieved 100 percent inter-rater consensus for case selection. Each of the three researchers independently reviewed the redacted coroner's report for each decedent, qualitatively identified the relevant variables for our study, and drew a conclusion about the possibility of the decedent being a SAA. Thereafter, we convened as a group to thoroughly discuss the information in the coroner's reports of each case to decide if the decedent was SAA. Based on this discussion, three cases were deemed as false positives and rejected from further analysis. Hence, our sample consisted of 38 cases that all researchers agreed were South Asian.

Step 3: The information was organized in a comprehensive taxonomy table for further analysis. The variables we studied included year of death, age, gender, marital status, race on record, employment history, method of death, cause of death, mental health diagnoses, prior mental health treatment, prior suicide attempts, substance use history, family support, and presence of suicide note. Whereas each researcher studied the relevant information for each case, the preliminary conclusions were discussed via conference calls. Contextual factors, such as precipitating events, were discussed by the entire team to finalize a particular conclusion.

Step 4: As the next step we created a proxy variable by combining multiple factors: method of death, presence and contents of suicide notes, prior attempts, documented or reported preceding mental health or behavioral disturbances, and substance use with the coroner's documentation of precipitating events and impulsivity to classify the suicides into two categories (i.e., premeditated suicide vs. impulsive suicide). Each researcher independently classified the suicides as premeditated versus impulsive. Thereafter, we discussed the cases to reach inter-rater consensus on the designation of premeditated versus impulsive by using the following criteria for determining suicide established by the CDC (MMWR 37(50), 1988).

Self-inflicted. There is evidence that death was self-inflicted. This may be determined by pathologic (autopsy), toxicologic, investigatory, and psychologic evidence and by statements of the decedent or witnesses.

Intent. There is evidence (explicit and/or implicit) that, at the time of injury, the decedent intended to kill himself/herself or wished to die and that the decedent understood the probable consequences of his/her actions. This evidence may include one or more of the following items that would suggest premeditated suicide:

- Explicit verbal or nonverbal expression of intent to kill self.
- Implicit or indirect evidence of intent to die, such as:
  - preparations for death inappropriate to or unexpected in the context of the decedent's life,
  - expression of farewell or the desire to die or an acknowledgment of impending death,
  - expression of hopelessness,
  - expression of great emotional or physical pain or distress,
  - effort to procure or learn about means of death or to rehearse fatal behavior, precautions to avoid rescue,
  - evidence that decedent recognized high potential lethality of means of death, previous suicide attempt, previous suicide threat, and
  - stressful events or significant losses (actual or threatened), or serious depression or mental disorder.

Variables

The coroner's reports captured some standard variables for each of these cases such as age, race, gender, marital status, year of death, method of death, and location of death. However, through the open text fields on the reports, we were able to obtain other variable such as education level/status, employment status, and living arrangement of the deceased. Factors such "premeditated/impulsive" suicide were derived based on the coroner's notes that described details including previous history/attempts of suicide, means of suicide, the timing and planning for the incidents, preceding situational

Table 1. Descriptive Characteristics of Suicide Among South Asian Americans in DuPage County, IL, 2001 to 2017 ($N = 38$).

Characteristics	Overall		Male ($N = 29$)		Female ($N = 9$)	
	Number	%	Number	%	Number	%
Age (years)						
⩽19	4	11.0	3	10.3	1	11.1
20–35	9	24.0	6	20.7	3	33.3
36–50	9	24.0	6	20.7	3	33.3
51–64	13	34.0	11	37.9	2	22.2
⩾65	3	8.0	3	10.3	0	0.0
M (*SD*)	44.2 (± 17.2)		45.3 (± 18.1)		40.4 (± 15.4)	
Classified race						
American Indian	1	3.0	1	3.4	0	0.0
Asian	13	34.0	10	34.5	3	33.3
Asian (East Indian)	3	8.0	0	0.0	3	33.3
Indian	1	3.0	1	3.4	0	0.0
White	5	13.0	4	13.8	1	11.1
Other	15	39.0	13	44.8	2	22.2
Marital status						
Married	17	45.0	12	41.4	5	55.6
Single	13	34.0	12	41.4	1	11.1
Divorced or separated	8	21.0	5	17.2	3	33.3
Education level/status						
Doctorate	2	5.3	2	6.9	0	0.0
Student status	5	13.2	4	13.8	1	11.1
Unknown	31	81.6	23	79.3	8	88.9
Employment status						
Business owner	5	13.2	4	13.8	1	11.1
Employed	8	21.1	6	20.7	2	22.2
Unemployed/retired	6	15.8	5	17.2	1	11.1
Worked for religious institute	1	2.6	1	3.4	0	0.0
Student	5	13.2	4	13.8	1	11.1
Unknown	13	34.2	9	31.0	4	44.4
Year of death[a]						
2001–2004	5	13.2	5	17.2	0	0.0
2005–2007	9	23.7	7	24.1	2	22.2
2008–2010	6	15.8	4	13.8	2	22.2
2011–2013	9	23.7	6	20.7	3	33.3
2015–2017	9	23.7	7	24.1	2	22.2
Psychiatric correlates						
Symptoms of behavioral disorder	27	71.1	22	75.9	5	55.6
Mental health diagnosis	22	57.9	17	58.6	5	55.6
Received psychiatric care	13	34.2	9	31.0	4	44.4
Prior suicide attempt	8	21.1	6	20.7	2	22.2
Made suicidal statements	1	2.6	1	3.4	0	0.0
Emergency room visit for psychiatric treatment	5	13.2	5	17.2	0	0.0
Prior history of substance use problems	8	21.1	7	24.1	1	11.1

[a]0 cases were identified in the year 2014 and hence, that year is excluded from this table.

factors such as family stress or financial difficulties, and comments made by decedent in a suicide note.

Data Analysis

We analyzed the overall data using the descriptive cross-tabulation or frequency calculation methods. In Table 1, we identified the rates of suicide by age, classified race, gender, marital status, educational attainment, employment status, year of suicide, and psychiatric correlates. Additionally, to examine the differences by gender, we classified the above-mentioned characteristics by gender using the cross-tabulation method. In Table 2, we analyzed method of death, location of death, and living arrangement. Further analyses assessed the prior history of behavioral symptoms and treatment, drug and alcohol use prior to death by suicide, and probability of planned/premeditated suicides.

Table 2. Premeditated Versus Impulsive Suicides Among South Asian Americans in DuPage County, IL, 2001 to 2017 as Assessed by Method of Death and Living Arrangement.

	Type of suicide					
	Pre-meditated ($n = 29$)		Impulsive ($n = 9$)		Total ($n = 38$)	
Characteristics	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)
Method of death						
Hanging	11	37.9	5	55.6	16	42.1
Blunt force from vehicle/train	5	17.2	3	33.3	8	21.1
Self-immolation	3	10.3	0	0.0	3	7.9
Overdose	3	10.3	0	0.0	3	7.9
Gunshot	2	6.9	0	0.0	2	5.3
Chemical poisoning	1	3.4	1	11.1	2	5.3
Drowning	2	6.9	0	0.0	2	5.3
Jumping from a height	1	3.4	0	0.0	1	2.6
Electrocution	1	3.4	0	0.0	1	2.6
Location of death						
Home	17	58.6	5	55.6	22	57.9
Outside	12	41.4	4	44.4	16	42.1
Living arrangement						
Alone	5	17.2	2	22.2	7	18.4
With family	21	72.4	7	77.8	28	73.7
With roommates	1	3.4	0	0.0	1	2.6
Unknown	2	6.9	0	0.0	2	5.3

Note. n = number.

Results

From 2001 to 2017 DuPage County, IL reported 38 deaths by suicide among SAAs. Descriptive statistics and psychiatric correlates can be found in Table 1. Over the 17-year study, it was seen that majority ($n = 13$, 34.2%) of suicides among SAAs were by those aged between 51 and 64 years, followed by those between age 36 and 50 ($n = 9$, 23.7%). Together these age groups (36–64 years) accounted for about 58% of the suicide deaths among South Asian Americans. Males accounted for about 76% of the suicides making the rate of male suicide more than threefold higher than women.

Overall, only four cases of our sample were classified as South Asian which included one case among the 38 (3%) referenced as "Indian," and 3 (8%) listed as "East Indian." Overall, "Other" ($n = 15$, 40%), "White" ($n = 5$, 13%), and "American Indian" ($n = 1$, 3%) accounted for 56% misclassification in race followed by "Asian" ($n = 13$, 34%). Majority of the decedents were married ($n = 17$, 44.7%), followed by those who were divorced or separated ($n = 8$, 21.0%), and those who were listed as single ($n = 13$, 34%). The educational qualifications of most decedents (81.6%) were unknown. Overall, majority of the decedents had a known employment status where 21.1% were employed, 15.8% were unemployed or retired, 13.2% were business owners, 13.2% were students, and 2.6% shown as working for a religious institute. When these characteristics were classified by gender, it was found that a majority ($n = 6$, 66.6%) of the female decedents were younger and belonged to the 20 to 50 years age group, while majority of the male decedents were 51 years and older ($n = 14$, 48.2%). Additionally, most of the male decedents were classified as the "Other" race ($n = 13$, 44.8%) whereas most of the female decedents were misclassified as "Asian or East Indian" ($n = 6$, 66.6%). Majority of the male decedents were listed as married or single, with an unknown educational, and employment status (82.2%, 81.6%, and 34.2%, respectively), whereas a majority of the female decedents were married; and with an unknown education and employment status (55.6%, 88.9%, and 44.4%).

Among decedents, 71.1% reported symptoms of a behavioral disorder (including manic attacks, depression, anxiety, epilepsy and schizophrenia, and anger issues), 57.9% reported a mental health diagnosis, whereas only 34.2 % of the decedents had received psychiatric treatment. Approximately 1 in 5 (21.1%) of decedents had a previous history of suicide attempts, 13.2% visited the emergency room for psychiatric conditions, 2.6% made suicidal statements prior to suicide. Substance use problems were reported in 21.1% of the cases. Among the male decedents, majority had experienced symptoms of behavioral disorders ($n = 22$, 75.9%) and only 58.6% of

males and 55.5% of female decedents had a mental health diagnosis, whereas only 34.2 % of the decedents had received any type of psychiatric treatment. Interestingly, of the eight decedents with prior history of substance use problems, seven were males.

In Table 2, we present our assessment of the cases of pre-meditated suicides based on lethality of intent, method of choice, and contextual factors as presented in the coroner's reports. A majority of the suicides (76.3%, $n = 29$) were premeditated and among these some were well-planned and executed, whereas 23.7% ($n = 9$) appear to have been impulsive suicides triggered by immediate circumstances. Among the pre-meditated suicides, the most common methods of death were hanging (37.9%), blunt force by vehicle or train (17.2%), self-immolation (10.3%), and overdose (10.3%) reflecting a higher lethality of intent to die in the methods chosen. The impulsive suicides include hanging (55.3%, $n = 5$); blunt force by vehicle or train (33.3%, $n = 3$), and chemical poisoning (11.1%, $n = 1$). A higher prevalence (57.9%) of the suicides occurred at home whereas 42.1% occurred elsewhere.

Discussion

This study adds significantly to the limited body of research on suicide among SAAs in the United States. Overall, research data on South Asian Americans is limited as they have frequently been overlooked in mental health literature (Lubin & Khandai, 2016); and have not been mentioned in several important mental health studies based on the National Latino and Asian American Study data set (Cheng et al., 2010; Duldulao et al., 2009; Kuroki & Tilley, 2012). It was, therefore, of great importance to conduct this study to address the lack of research on this growing public health problem. The primary aims of this research were to provide an overview of key contextual factors for the suicide deaths as recorded in coroner's reports from an Illinois county that has a high population of South Asians, and to highlight shortcomings and gaps in the coroner's reports.

The National Committee on Vital and Health Statistics recommended that the department of Health and Human Services (HHS) move toward gathering microdata, defined as non-aggregated data containing variables that make the respondents potentially identifiable, and not overlook small Asian American and Pacific Islander subpopulations scattered inconsistently throughout the United States (Ghosh, 2010). Furthermore, the Institute of Medicine (Ulmer et al., 2009) recommended that when directly collected race and ethnicity data are not available, entities should use indirect estimation strategies such as surname analysis to assess race or ethnicity. Our investigation implemented these recommendations in developing a methodology to identify South Asian Americans by name on coroner's death records. Our results showed that racial misclassification caused a gross undercount of South Asian American suicides. Whereas Arias et al (2008) had found as much as a 7% undercount of Asian Americans, our study found that 89% of our sample was marked as something other than South Asian.

The study results suggest caution with assumptions about gender and age-based vulnerability to suicide in South Asian Americans. Per U.S suicide data, 3.5 men die by suicide for 1 female suicide, and the group most likely to die by suicide are White, middle-aged men (Drapeau & McIntosh, 2018). Our study found a similar ratio in male to female suicides, and in the age-related trends with the majority (76%) of the suicides being male and middle aged (36–64 years, 58%). This finding is important because it contradicts prior research suggesting Asian American women and younger Asian Americans being at greater risk of suicide (Lester, 1994)

The suicide deaths in our study suggest a high lethality of intent to die in the sample that is noteworthy. The majority of suicides were premeditated as opposed to impulsive. Most of the decedents (76.3%) were living with their families or had support from friends, highlighting the fact that these individuals were keeping their suicidal ideation private, and not communicating their struggles with mental health issues. Our finding supports previous research suggesting that South Asians are reluctant to seek mental health services (Kreps, 2017); due to stigma (Kishore et al., 2011) or lack of awareness of resources. The pre-meditated suicides had a preponderance of hanging deaths, followed by blunt force from stepping in front of a train or vehicle, overdose, and self-immolation, all common choices on the South Asian subcontinent. Hanging is among the most frequently used methods in South Asia (Jordans et al., 2014; Wu et al., 2012); and the "quickest" and "easiest" method for a death by suicide (Biddle et al., 2010). Most of the suicides occurred in the decedent's home followed by public places (i.e., roads and railroad tracks), indicating a cultural preference that is consistent with prior reported studies from South Asia (Rabi et al., 2017). Self-immolation is a uniquely horrific method of suicide that is common in South Asia but is seldom practiced in non-Asian American groups. We reported three cases (7.9%) of suicide by self-immolation in our sample of 38. These suicides demonstrated a significant amount of planning as gasoline must be purchased in order to complete the suicide. On the other hand, very few of the decedents in our study ($n = 2$; 5.3%) chose to die by gunshot - the most common method of suicide in the US (52.8%, AFSP,

2022). Gun ownership is not popular among South Asians and it would have taken careful planning to acquire a weapon. Our findings show that, despite residing in the US, our subjects chose culturally sanctioned methods of suicide, suggesting a cultural vulnerability in SAAs that elevates suicide risk, and needs careful examination in the research. Our findings support previous research by Lester that showed that "the epidemiology of suicide for Asian Americans showed similarities to the results of epidemiological studies of Asians in their home nations, and also that cultural factors have an important influence in the circumstances of suicide" (Lester, 1994). As new cohorts of South Asian immigrants arrive in the U.S. they will undergo similar patterns of acculturation, cultural conflict, and acculturative stress. Studying these factors as the contexts that drive suicidal ideation and behavior should be an important and much needed focus of future research and clinical program development.

Families reported that the majority of decedents had a history of mental illness, including 71.1% reporting behavioral disorders and mental health diagnoses (57.9%). Our numbers are consistent with US data, as depressive symptoms are highly correlated with suicide. Both adults and youth in our study were impacted by mental health diagnoses. Whereas psychiatric illness consistently emerges as the most prominent cause of suicide (Conwell et al., 2011) among adults, South Asian American youth are affected by other factors such as family stress, shame, relationship issues, and terminal illness. Moreover, capturing the impact of acculturation stress among these victims is important yet missing from the coroner's report. Testing this hypothesis was beyond the scope of our study. Yet only 34.2% of our sample had ever undergone mental health treatment, and only 13.2% were admitted to an emergency room for psychiatric related conditions. There are numerous factors that inhibit Asian Americans' access to mental health treatment and should be studied further. Efforts need to be in place for developing culturally specific psychiatric services, outreach, and engagement in the community to educate families on resources available, and to address deep-rooted mental health stigmas.

South Asian suicides are often underreported or misclassified; for example, a large percentage (89.4%) were misclassified in our sample as "other," American Indian, White, or just "Asian." The absence of correctly identified demographic characteristics such as race and ethnicity have significant public health implications. First, it minimizes the problem of suicides and mental illnesses among the South Asian population and increases the perception that there is no need for suicide prevention in this high-risk population. Consequently, no public health funding is targeted to develop interventions, collect data, and provide evidence-based findings to policymakers. Moreover, owing to the lack of substantial data and evidence, the South Asian American community does not understand the scope of the problem, fails to internally monitor trends, notice the signs within their social groups, or undertake the responsibility of offering timely psychiatric care. In fact, the lack of data encourages the inherent cultural tendency of South Asian Americans to suppress their awareness of suicide and avoid public engagement with this issue, thus preventing any efforts to mobilize prevention efforts.

Finally, and importantly, our study highlights several errors and data omissions in coroner's reports and the importance of training coroner's staff in culturally sensitive ways of gathering data such as the use of community-based language translators that could interpret the coroner's questions to family respondents who may not understand spoken English well enough. Whereas racial and ethnic misclassification is the most obvious and easily corrected error, the lack of data on contextual factors prevents a thorough understanding of the context of these suicides. In addition, the authors' ability to classify cases into premeditated or impulsive suicide is restricted to what was reported in the coroner's report. It is imperative to gather such information if future efforts in suicide prevention are to succeed.

Conclusions

Psychological autopsy studies are the gold standard for understanding why an individual chooses to die by suicide. Our research highlights the importance of moving toward implementing more systematic study of the factors that influence suicidal behavior, and the barriers to gathering relevant information. As such, our study has several public health and social service implications. Aggregate Asian American data and significant racial/ethnic misclassification mask the high rate of suicide in South Asian Americans. Although a high percentage of victims had previous mental health diagnoses, or symptoms of behavioral disorders, very few had received mental health treatment. Further research to accurately classify South Asian Americans and identify cultural risk factors for suicide could lead to targeted interventions and prevention programs.

This study highlighted the advantages of partnering with coroners and medical examiner's staff on data collection to gather accurate information from South Asian Americans and other ethnic minorities. It also underscored the need to educate mental health providers and other first responders (police and coroners' staff) on the cultural factors that influence South Asian Americans' struggles with mental illness and their preferred methods for completing suicides. Such awareness could increase timely intervention to prevent suicide. Standardizing the nomenclature for race and ethnicity and educating first

responders on the importance of correct classification of race could yield significant dividends in improving the accuracy of national mortality data.

The importance of disaggregating ethnic minority health data and engaging minority scholars in the research has been demonstrated in this research. A major strength of this study was the use of a team of South Asian American researchers who identified cases by name. While such tailored strategies have been recommended by the Institute of Medicine (2009) they have been seldom used and may be of benefit to other under-researched sub-groups. Having a research team that belongs to the community and knows the culturally specific contexts of suicide helped in the analysis of the findings. Such approaches can be replicated by other researchers who are from minority and immigrant communities to address health disparities and advance the mission of suicide prevention.

More work is needed to elucidate the social and environmental factors underlying suicide among South Asians. Further studies need to be comprehensive in the examination of risk and protective factors at the family and individual levels including the impact of acculturation stress on individuals and families. Areas of high immigrant density help promote a sense of community, particularly among immigrants and in turn, protects against suicide risk (Pan & Carpiano, 2013). The investigation of protective factors, including social-connectedness, belonging to a religious community, social networks (Abbott et al., 2019; Lopez-Castroman et al., 2020; Philip et al., 2016), and how these known protective factors apply to South Asians is critical for development and implementation of evidence-based and culturally adapted suicide prevention strategies, including increasing awareness, expanding mental health and culturally-specific counseling, as well as education and outreach in the communities.

As understanding of the suicidal mind increases, and there are scientific advances in the field of suicidology, powerful theories are being tested to understand the factors that drive individuals to suicide. The interpersonal theory of suicide (Joiner, 2005) explains suicidal behavior as the outcome of perceived burdensomeness and thwarted belongingness among people that have the ability enact suicide. Durkheim (1897) described egoistic and altruistic suicides among the four types of suicide caused by societal factors. On the other hand, Schneidman (1998) spoke of psychache and psychic perturbation as being the common factor in all suicides. Whereas, a detailed analysis of each decedent's circumstances was beyond the scope of this study, our examination of the coroner's reports suggests that some of the suicides were completed due to perceived burdensomeness, some could be attributed to thwarted belongingness, some were triggered by a false altruistic belief that the family would benefit from insurance payouts, and some were egoistic suicides triggered by rejection and humiliation. Yet, all these individuals were in deep psychological pain (psychache) and each case merits further analysis in future research. We hope that our research will stimulate greater efforts to estigate cultural factors, acculturative stress, and interpersonal issues linking contemporary theories to the increased suicide risk among South Asian Americans.

Limitations and Future Directions

This study has some limitations that are similar to those found in previous studies of suicide, related to ostensibly small numbers. First, our sample was limited to one county in Illinois that tends to attract a highly educated, middle class South Asian population. Although it included individuals who were unemployed or in financial difficulties, our sample may not represent the total socio-economic diversity in the South Asian population. Hence, the findings may not be generalizable to South Asian Americans in the rest of the U.S.

Second, coroner's reports offered limited details on financial and employment status and medical history, along with incomplete interview reports from family or significant others, thereby preventing us from drawing accurate conclusions about the exact precipitating factors or trigger events for the suicides. Key elements of information required to understand the phenomenology of suicide in ethnic minorities include family dynamics, income and educational levels of immediate family members, professional status, duration in the U.S., and mental and physical health history. Such information would only be available from key-informant interviews. There is a great need to educate coroner's staff and first responders on culturally appropriate ways to gather accurate information. Third, inferences about gender differences might be inaccurate due to the low number of women that were victims of suicide ($n = 9$). Given that first and last names were used as the basis of identifying suicide decedents, our study may have resulted in an undercount of women, as women who marry a spouse with a non-South Asian last name may have been missed. Additionally, if individuals who were children of South Asian immigrants but did not have a traditionally South Asian name (particularly if they married someone without a South Asian last name), they may also have been missed. As it has become more normative to engage outside of the culture in recent years, it is important to consider this limitation (Khera & Ahluwalia, 2021). Evaluating risk factors at the gender level is highly impactful, particularly when implementing gender

specific interventions. It is recommended that future studies with a larger sample size evaluate gender differences, and how risks may vary, particularly among SA victims.

This study established a promising direction for future research on suicide in South Asian Americans. While accessing a larger sample size is a crucial step for confirming the true prevalence of suicide, future research should also be focused on in-depth analyses of the contextual factors that precipitate suicide attempts in this group, including suicide ideation, suicide plan, and reflect the current theories of suicide and evidence-based practices in the development of culturally appropriate suicide prevention programs.

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ORCID iDs

Aruna Jha https://orcid.org/0000-0003-0591-0997
Manik Ahuja https://orcid.org/0000-0002-3446-9216

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