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Traffic Safety in Communities of Color

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Abstract:

Over the past half-century in the United States, medical advances, improvements in road and vehicle design, and traffic safety efforts have all helped in reducing traffic-related injury and death. However, research suggests that among the US population, certain ethnic groups, namely African Americans,* American Indians, and Latinos, continue to face higher traffic-related risk. Among all US ethnic groups, motor-vehicle injury is a leading contributor to unnecessary injury and premature death. Improving traffic safety outcomes among these groups could help reduce their overall health disparities.

This paper examines the available research on how traffic safety issues specifically affect higher-risk communities of color, demonstrates that significant disparities in traffic safety outcomes exist between these groups and whites, and explores possible reasons for these differences. The paper focuses on three traffic safety issues that are associated with poorer outcomes among these communities of color: seat belt use, impaired driving, and pedestrian safety.

This paper highlights major traffic safety needs within specific communities of color, and concludes that ongoing data collection and analysis are necessary to provide a clearer, more complete picture of the issue as well as to inform interventions and efforts targeted toward these communities.



More research is needed to understand past traffic safety successes (such as the decreases in impaired driving or increases in seat belt use that have occurred across ethnic groups) so that these successes can be extended. Similarly, evaluations of current interventions are greatly needed, particularly for comprehensive and longitudinal studies. Finally, there is also a need for research that distinguishes the effects of ethnicity versus the effects of socio economic status on traffic safety outcomes.

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Traffic Safety and Communities of Color

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Traffic Safety and Communities of Color

I. INTRODUCTION

Purpose

Over the past half-century in the United States, medical advances, improvements in road and vehicle design, and traffic safety efforts have all had a tremendous impact in reducing traffic-related injury and fatality. However, research suggests that among the US population, certain ethnic groups, namely African Americans,* American Indians, and Latinos, continue to face higher traffic-related risk. This paper examines the available research on how traffic safety issues affect higher-risk communities of color, demonstrates that significant disparities in traffic safety outcomes exist between these groups and whites, and explores possible reasons for these differences. The paper focuses on three traffic safety issues that are associated with poorer outcomes among these communities: seat belt use, impaired driving, and pedestrian safety.

Background

It has been well documented that, within the US, certain ethnic and racial groups experience differences in health status and rates of disease and injury compared to whites. African Americans fare much worse than whites across several health status indicators, including infant mortality, homicide, and syphilis: Syphilis rates among African Americans are more than thirty-three times higher than among whites.[1] Similarly, compared to whites, rates of diabetes and homicide are significantly higher among Latinos and American Indians, and tuberculosis rates are six to eight times higher among African Americans, American Indians, and Latinos. [1], [2] While these and other disparities are thought to result from the interaction of many factors including genetics, behavior, and the environment, the most important factors are thought to be disparities in income and education that exist between communities of color[†] and whites.[2]

In examining traffic safety, it is difficult to distinguish between the influences of race/ethnicity from the influence of socioeconomic status (SES). This is partly due to a lack of research on how traffic injury rates or behaviors vary within a specific ethnic group by SES (e.g., assessing if African Americans with higher incomes have different seat belt use rates than African Americans with lower incomes). African Americans, American Indians, and Latinos are disproportionately affected by poverty, with rates roughly three times higher than the poverty rate of whites.[3] Several studies document lower rates of seat belt use among people with lower incomes or lower SES.[4],[5],[6],[7],[8] Similarly, lower SES may mean less access to products that enhance safety, such as new child safety seats, and it is recognized that people with lower incomes also tend to live in communities in which environmental hazards and deterioration place them at higher risk for injury.

Neighborhood design, road and sidewalk safety, public transportation access, and local job availability are among factors that influence transportation and the risk of traffic injury. For example, housing located along high-volume, high-speed roadways may place residents at greater risk for pedestrian injury. Recommendations to improve traffic safety among communities of color should examine not only behavioral factors of the individual, but also environmental factors and transportation options.

II. DATA AND RESEARCH FINDINGS

* In this paper, the term ‘African American’ is used to refer to non-Hispanic blacks; the term ‘white’ refers to non-Hispanic Caucasian Americans.

[†] For the remainder of this paper, the term ‘communities of color’ is used to refer to African Americans, American Indians, and Latinos.

Determining how the risks faced by communities of color may differ from those faced by whites, and how these risks impact traffic safety considerations and strategies, requires examination of a fragmented and at times contradictory body of research. Many contradictions are due to varied data sources and methods of data collection. These include differing strategies for classification and reporting of racial and ethnic categories, calculation of injury and fatality rates (i.e., per population or per vehicle-miles traveled), and data collection (i.e., from self-report, observation, or institutional records such as fatality data.) Care must be taken when interpreting results from a particular study and when comparing results across studies.

In addition, there is little national traffic safety data by race/ethnicity. The Fatality Analysis Reporting System (FARS), the primary source of national data on traffic crash victims, provides no information on race/ethnicity. In response to incomplete data, researchers often use data from several sources to determine how traffic injury affects ethnic groups differently. For example, to determine traffic crash fatality rates, seat belt use, and alcohol involvement of different ethnic groups, Voas, et al.[9] recently matched FARS data with mortality data from the National Center for Health Statistics.

Ethnicity and Vehicle Crash Involvement

Across all races/ethnicities, motor-vehicle injuries are a leading cause of fatality, with those between ages one and 44 representing a high proportion of fatalities.[10],[11] Motor-vehicle crashes rank higher as a leading cause of fatality and account for a higher percentage of fatalities among American Indians and Latinos compared to whites. The percentage of fatalities due to motor vehicle crashes is roughly the same among whites and African Americans.[9],[11]

African Americans

Despite fewer miles driven and fewer average trips per person annually, African Americans have a higher fatality rate from motor vehicle collisions compared to whites.[1] This finding suggests that, per trip, African Americans have a higher risk of fatality as well.

Baker and colleagues [12] found that when exposure is considered, African American youth, particularly males, are indeed at greater risk of fatality from motor vehicle crashes than youth from other ethnic groups. While racial or ethnic differences in youth fatalities due to motor vehicle crashes are unremarkable when compared per 100,000 population, fatality rates per billion vehicle-miles of travel (VMT) are higher among African American youth than among white youth. African American children ages five to 12 are at particularly high risk and have a higher fatality rate per VMT than either white or Latino children. When gender is considered, African American male teenagers have the highest fatality rates per VMT when compared to white and Latino teenagers of both sexes. African American female teenagers have the lowest fatality rate per VMT.[12]

Latinos

While motor vehicle fatality rates for Latinos overall are lower compared to whites,[1] Latinos in specific regions and age groups may face higher risk than whites. For example, a Colorado study found the motor vehicle crash fatality rate per population to be significantly higher among Latino motorists (21 per 100,000 population) when compared to white motorists (12 per 100,000).[4] According to California Highway Patrol data, Latinos in California are also involved in a disproportionately high percentage of motor vehicle crashes, especially in rural areas.[13] National data have indicated that age-adjusted fatality rates from motor-vehicle crashes are higher among Latino males than among white males but lower among Latino females than among white females.[9],[14]

Similar to African American youth, Latino youth, particularly teenagers, are at greater risk of motor vehicle fatalities per VMT when compared to white youth. Among people age 5- 19, fatality rates per VMT are higher for Latinos than for whites.[12]

American Indians

Compared to whites, the age-adjusted fatality rate from motor vehicle crashes among Native Americans is about twice as high ,[1, 9] and the rate among members of the Navajo Nation (one of the largest American Indian tribes in

the U.S.) is five times as high.[15] Similarly, in a New Mexico study covering a period between 1958 and 1990, both male and female American Indians were found to have motor vehicle fatality rates that were two to three times higher than whites.[14]

Seat Belt Use

Research findings on seat belt use by race/ethnicity vary widely. The National Occupant Protection Use Survey (NOPUS), which is based on observations of seat belt use, has never detected a statistically significant difference in use between ethnic groups. According to the 2002 NOPUS, seat belt use among African Americans rose to 77% in 2002 from 69% in 2000, and use among other non-white ethnic groups also increased, from 69% in 2000 to 78% in 2002. In comparison, NOPUS estimates of belt use are 75% for the general driving population and 76% among whites.[16] However, the National Highway Traffic Safety Administration (NHTSA) surveys have found that belt use is lower among African Americans, Latinos, and American Indians when compared with the general driving population.[4]

African Americans

The Meharry Medical College report, a major study on seat belt use among African Americans, found a wide variation in seat belt use among African Americans compared to whites. [17] Other studies have shown lower seat belt use among African Americans, and have included records of fatally injured vehicle occupants, [9], [18], [19] while studies that have shown higher or equivalent seat belt use among African Americans include NOPUS and state-level studies in North Carolina and Connecticut.[20],[21] Inconsistencies could be attributed to differences in study methodology or local variations in study populations.

However, there is more research suggesting that African Americans are less likely to buckle up. According to the Meharry Medical College research, African American youth are 50 to 60% less likely to be buckled up than children from other racial/ethnic backgrounds.[22], [23] Several pediatric studies have found lower rates of belt use among African American children injured in crashes when compared to white children.[8] Young African American males may be more at risk: in a California survey of high school students, African American male teenagers reported lower seat belt use rates than white male teenagers, but racial/ethnic differences in seat belt use rates were not reported among female teenagers.[24]

Latinos

The research on Latino seat belt use is also inconsistent. State-level studies have shown that Latino motorists involved in traffic crashes have lower rates of seat belt use than white motorists.[19], [4] However, in an observational study of seat belt use among African Americans, Latinos, and whites in four U.S. cities, seat belt use among Latino drivers was found to be as high or higher than use among whites.[25] These contradictory findings may be due to possible differences in seat belt use among different Latino groups. According to a recent study analyzing national crash fatality data, Cuban Americans and Puerto Rican Americans have higher rates of seat belt use than whites, while Mexican Americans have lower seat belt use than whites.[9]

Both statewide and national studies have found lower rates of seat belt use among Latino youth than among white youth.[12] One study found that Latino children involved in motor vehicle crashes were four times more likely than white children to have been unrestrained.[26] As reported for African American teenagers in the same study, Latino male teenagers in California report lower seat belt use than white male teenagers, and Latino female teenagers report no differences in seat belt use compared to white female teenagers.[24]

American Indians

Existing research suggests lower seat belt use among American Indians compared to the general population. For example, national fatality data from vehicle crashes show American Indians to have the lowest seat belt use rates compared to any ethnic group.[9] However, the lack of research data for American Indians on traffic safety is evident as no additional information sources are available.

Impaired Driving

The research on differences in drinking and driving behavior between different ethnic groups is also inconsistent. According to self-reported data, whites have the highest rates of driving after drinking, followed by Latinos, and then African Americans.[27] One study suggests youth of color may be less likely than white youth to drive after drinking.[28] In contrast, findings based on roadside surveys of BAC levels, crash reports, and arrests show Latinos, American Indians, and African Americans to be over-represented in various drinking-driving populations.

African Americans

Alcohol involvement rates among African American drivers have decreased over the past two decades and appear to now be comparable to rates among whites. According to the 1996 National Roadside Survey, the percentage of African American drivers with blood alcohol concentration (BAC) over 0.10 decreased significantly between 1986 and 1996, and African Americans were as likely as whites in 1996 to drive with a BAC of 0.05 or greater.[29] While a 1996 study of Illinois trauma victims found that African American crash victims had higher alcohol involvement rates than white crash victims,[19] a more recent study has shown African Americans to generally have the same rate of alcohol involvement as whites.[9] However, A 2001 national survey also indicated that African American high school students were less likely than white and Latino students to report driving after drinking, and less likely to report lifetime alcohol use, current alcohol use, and episodic heavy drinking.[30]

Latinos

Several studies have shown that Latinos are more at risk for alcohol involvement in motor vehicle crashes than whites. According to the 1996 National Roadside Breath Alcohol Survey, Latino drivers were significantly more likely than white and African American drivers to drive after drinking and to have BACs over the legal level.[29] State-level studies have shown that Latino drivers involved in traffic crashes have higher rates of alcohol involvement than white motorists.[19] Alcohol involvement in fatalities related to motor vehicle crashes seems to vary among different Latino groups. Mexican Americans have a significantly higher rate than whites, but Puerto Rican Americans, Cuban Americans, and Central and South Americans have the same or lower rates of alcohol-related fatalities compared to whites.[1]

Alcohol involvement is also a concern among Latino youth. While Latino youth are as likely as white youth to report driving after drinking, they are significantly more likely than both white and African American youth to report having driven with a drinking driver.[30] In focus groups, Latino youth have expressed concern about the inability to avoid riding with drunk drivers and inability to prevent friends from driving drunk.[31]

American Indians

According to the national data analyzed by Voas and colleagues, American Indians have the highest percentage of alcohol-related traffic fatalities of any ethnic group. Among American Indians, alcohol is involved in 75% of driver fatalities and over 70% of pedestrian fatalities.[9]

Pedestrian Safety

African Americans, Latinos, and American Indians are all at greater risk than whites for pedestrian injury and fatality. Voas and colleagues noted the presence of alcohol in about 40% of African American pedestrian fatalities, roughly 40% of Latino pedestrian fatalities, and over 70% of American Indian pedestrian fatalities. In pedestrian fatalities involving alcohol, pedestrians are more likely than drivers to have been drinking.[9]

African Americans

As pedestrians, African Americans are particularly at risk for traffic-related injury and fatality. According to the National Center for Injury Prevention and Control, the pedestrian fatality rate for African Americans was nearly

twice that for whites in 1997.[32] In California in 1998, African Americans represented 7% of the state's population but accounted for 12% of the state's hospitalized pedestrian fatalities and injuries.[33] This higher risk for pedestrian injury or fatality may be due in part to differences in transportation patterns since African Americans are less likely to own cars and much more likely to use public transit and walking compared to whites.[2]

Latinos

According to a Colorado study of fatal traffic crashes, Latinos were more likely than whites to be killed as pedestrians.[4] Studies from other regions have shown similar results, with Latino pedestrians at greater risk than whites for pedestrian injury and fatality in Washington D.C., Atlanta, and California.[33] In California, Latinos represented 30% of the state's population in 1998 but accounted for 37% of the state's hospitalized pedestrian fatalities and injuries. Latino children comprised 39% of the child population, but 48% of all child pedestrian injuries and fatalities.[33] Like African Americans, Latinos make more walking and public transit trips than whites.[2]

American Indians

In 1997, pedestrian fatality rates for American Indians was nearly three times the rate for whites.[32] An Arizona study found American Indians to be at significantly higher risk for pedestrian mortality relative to the state's general population, and pedestrian fatalities were major contributors to excess American Indian motor vehicle crash mortality.[34] American Indians are particularly at risk for alcohol-related pedestrian fatalities. A New Mexico study found that 90% of American Indian pedestrians killed in crashes were intoxicated, and the median BAC of these victims was 0.24 g/dl (three times the legal rate of 0.08 effective in most states).[35] Nationwide, over 70% of pedestrian fatalities among American Indians involved alcohol (compared to approximately 35% among white pedestrians).[9]

III. INFLUENCES ON CRASH RISK, SEAT BELT USE, AND IMPAIRED DRIVING AMONG PEOPLE OF COLOR

While it is difficult to determine conclusively what contributes to higher crash rates, lower seat-belt use, and higher alcohol involvement rates among certain ethnic groups, researchers have identified several factors that may explain why communities of color are at higher risk. These include individual factors such as age, gender norms, SES, parental example, misperceptions about risk, and cultural norms, as well as community-level factors such as physical environment, rural settings, and local laws and law enforcement.

Individual Factors

Age

Drivers under the age of 25 have the highest rate of involvement in fatal traffic crashes per population of any age group.[10] Young drivers are particularly at risk for both crash involvement and willingness to engage in behaviors that place them at greater injury risk, attributable to their impulsiveness, tendencies toward experimentation, lack of driving experience, and belief in their invincibility.[36]

Both seat belt use and impaired driving are of special concern for younger people. At all levels of positive blood alcohol concentration (BAC), the risk of being involved in a motor vehicle crash is higher for people under 25 than for older drivers.[37] When comparing age groups, intoxication rates were highest for drivers under age 25: In 2001, 33% of 21 to 24-year-old drivers killed in crashes were legally intoxicated (had a BAC of 0.08 or higher); among 16 to 20-year-old drivers, the rate was 18%.[10] Several studies have shown that age is a significant predictor of restraint use, following a U-curve distribution: use is high among young children, lower among teens, and then higher again after age 25.[38][8] Currently, people ages 10 to 24 have the lowest restraint use rate (50%) of any age group.[10]

Gender Norms

Across all ethnic groups, more males than females die from motor vehicle crashes.[9] In 2000, the fatal crash involvement rate per 100,000 population was nearly three times higher for male drivers than for female drivers.[10] Similarly, in recent years, 70% of fatalities related to motor vehicle crashes were male, even though they represent only about 49% of the U.S. population.[9] Compared to females, males tend to have lower rates of seat belt use,[7], [25] are more likely to be involved in alcohol-related crashes and be alcohol-impaired (whether as drivers, passengers, pedestrians, or cyclists),[9] and are significantly more at risk for pedestrian fatalities.[40]

Males are also more likely to engage in high-risk driving,[41] and risky driving behaviors often co-occur. For example, people who drink and drive are less likely to buckle up.[42],[7] These drivers are also likely to engage in behaviors such as tailgating, running red lights, and speeding, and are more likely to be involved in injury crashes and to have more convictions for moving violations.[7], [43] Among people of color, males especially, lower rates of seat belt use and higher rates of impaired driving may therefore be related to higher rates of behaviors that place drivers and their passengers at increased risk for traffic-related injury.

Differences in traffic safety outcomes between ethnic groups may be more pronounced among males than females. For example, in a California survey of high school students, Latino and African American male teenagers reported lower seat belt use rates than did white male teenagers, but no racial or ethnic differences were reported among female teenagers.[12] When comparing seat belt use among African American, Latino, and white men and women without college degrees, Wells and colleagues found differences in men's use by ethnic group dependent on local enforcement of seat belt laws.[25]. In contrast, no ethnic differences were found in seat belt use among groups of women.[25]

Socioeconomic Status

People with lower SES are less likely to use seat belts and more likely to be victims in pedestrian accidents.[33] Children from poor families have especially high pedestrian injury rates,[45] which may be due to both greater exposure—walking more because of less access to a car—and children in general facing greater risk for pedestrian injury.[32] SES reportedly affects access to safety-enhancing equipment (such as child safety seats), access to educational programs and information, and individual levels of stress, all of which can have an impact on behaviors related to traffic safety.[46]

As discussed earlier, African Americans, Latinos, and American Indians are disproportionately affected by poverty and lower SES, which may account in part for disparities in traffic safety by ethnic group. For example, Shinar concluded that differences in seat belt use between different ethnic groups were not significant when considered in the context of variables related to SES.[7] In their study of fatally injured motorists in Colorado, Harper and colleagues noted that generally, Latino citizens have lower incomes than white citizens do, and are less likely to have completed high school and college. Authors concluded that when compared to white drivers, Latino drivers in fatal crashes were more likely to have had fewer than 12 years of formal education, and that among Latinos, “education, income, and literacy disadvantages appear to translate into traffic safety disadvantages.” [4]

People with low incomes are less likely to own cars and, therefore, twice as likely to walk when compared to people in households with higher incomes.[47] Studies have shown that lack of access to a car is associated with greater risk of injury as a pedestrian,[33] presumably due to greater exposure. Low-income people of color have even less access to cars than low-income people on average. Approximately 15% of low-income households in the U.S. do not own a vehicle, while 47% of low-income African American households and about 30% of low-income Latino households do not own vehicles.[2]

Parental Example

Parent behavior can greatly affect youth behavior, with traffic safety behaviors often being modeled over generations. For example, restraint use by adult drivers is the strongest predictor of restraint use by children,[49] and seat belt use has been found to be higher among high school students whose parents more often wear their seat

belts and tell their children to wear seat belts.[5] Therefore, if adults of color are less likely to use seat belts, then their children will also be less likely to buckle up. Latino youth have also reported that parents are a significant influence on teen drinking habits.[31]

Lack of Knowledge or Misperceptions about Risks

Drivers of color may also be less persuaded of the safety benefits of seat belt use.[5] Studies have shown that Latinos specifically may be less knowledgeable about the risks associated with seat belt nonuse and impaired driving.[46] In a survey of Latino farm workers, reasons for not using seat belts included the beliefs that rural roads were safer and that short trips reduced the risk of a crash.[13] In focus groups, participants stated that a major contributor to drinking and driving is a lack of understanding the effects of alcohol on driving ability,[46] and Latino youth reported believing that some amount of intoxication improved their driving.[31]

Cultural Norms

Within the Latino community, there is significant concern about Latinos' attitudes toward drinking and driving, and alcohol in general.[46] Higher than average alcohol consumption has been noted among Latinos,[28] and this has been attributed in part to cultural standards in rural Mexico, as well as among people with lower SES in the United States.[51] According to focus groups, another influence on drinking and driving behavior in Latino communities is the association of drinking to masculinity. [46] Nationwide, Latino youth are significantly more likely than white youth to report having consumed alcohol before the age of 13.[30]

Community Factors

Physical Environment

More affordable housing often is located along high-speed, high-volume streets,[33] and these types of streets are associated with increased risk for pedestrian injuries.[52] African American and Latino households also report more problems such as crime, deterioration, and poor public services,[53] which may place residents at increased risk for crashes and traffic-related injury. Finally, alcohol outlets and advertising may be more concentrated in lower-income communities of color. A study of one Latino community reported that "children see as many as 60 alcohol ads on a one-way trip between school and home." [54] Low SES census tracts and predominately black census tracts have been found to have significantly more liquor stores per capita than more affluent or predominately white communities,[55] and greater alcohol availability has been associated with increased impaired driving and alcohol-related crashes.[56], [57]

Rural Settings

Rural areas generally have higher motor vehicle-related mortality rates than urban areas,[58], [34] and the risks associated with living in a rural setting have been especially noted in the research on American Indians. American Indians often live in rural areas where there are greater road travel distances between destinations, higher rates of speed, poor road conditions, and a lack of public transportation and pedestrian facilities. [58] American Indians in rural areas also may have more limited access to emergency medical care, which may delay treatment of motor vehicle injuries when crashes do occur.[15] Finally, alcohol is not legal on many rural reservations, which may contribute to American Indian drivers traveling greater distances by car after drinking.[15]

Restraint use may also be different in rural areas. According to NHTSA, Latinos living in rural areas frequently drive pickup trucks and it is not uncommon for family members to ride in the back of the truck without restraints.[50] Riding in the back of open pickup trucks unrestrained may also be more common among rural American Indians.[15] This places occupants at greater risk of injury and fatality if a motor vehicle crash occurs. An observational study of seat belt use among Latino farm workers in rural areas also found significantly lower use when compared to national averages.[13]

Laws and Law Enforcement

Having tougher laws against impaired driving (reducing the legal intoxication limit) and seat belt non-use (changing seat belt enforcement laws from secondary to primary laws*) has been associated with reductions in crash-related injury and fatality.[59], [60], [61] For example, in July 1988, the Navajo Nation enacted a primary enforcement seat belt law, which resulted in an increase in seat belt use from 14% in June 1988 to 60% in September 1991, as well as a 30% decline in occupant injury hospitalization.[62]

Primary enforcement laws have been associated with higher rates of seat belt use across ethnic groups and ages.[59] Wells and colleagues noted that when laws are changed from secondary to primary enforcement, increases in seat belt use has been particularly high among African Americans. These increases have been attributed to the perception that they are more likely than whites to get a ticket for nonuse of seatbelts due to differential enforcement based on race, or 'driving while black' (DWB).

The concerns raised about DWB highlight the effects of enforcement—or perceptions of enforcement—on the effectiveness of a law. For example, Latino farm workers reported having no law enforcement officers present as a reason for not using seat belts,[13] and Latino focus groups nationwide cited weak enforcement as a contributing factor to drinking and driving in Latino communities.[46] Because laws alone have been shown to have less influence on people who are most likely to be involved in crashes and who would most benefit from compliance (e.g., young males),[63] increasing the perception that a law will be enforced (but not differentially enforced) appears to be an important means of increasing compliance.

IV. PRINCIPLES OF EFFECTIVE TRAFFIC SAFETY STRATEGIES WITHIN COMMUNITIES OF COLOR

It is important to understand how and why traffic-related injuries and fatalities differentially affect communities of color. The literature suggests several strategies that can be applied across ethnic groups and traffic safety issues: efforts should be comprehensive, include environmental change, target highest-risk groups, be culturally appropriate, be community-based, and involve diverse partners.

Develop comprehensive approaches

It is increasingly recognized that lasting improvements in traffic safety require a combination of interventions and strategies including safer transportation environments, tougher laws, more consistent and visible enforcement, and culturally appropriate outreach. Current interventions and studies within communities of color tend to be narrowly targeted, focusing on one type of intervention (e.g., providing education) or one traffic safety issue (e.g., increasing child safety seat use). While these are easier to evaluate and design, comprehensive approaches may have more impact. In Salinas, California (a predominantly Latino community), a comprehensive program to prevent alcohol-related injury combined highly publicized sobriety checkpoints, responsible beverage service training, education efforts, and limits on alcohol availability at public events and retail outlets. The program was implemented over a three-year period, and an evaluation showed it to be effective in reducing traffic crashes, injuries, and drunk driving rates over a sustained period of time.[64]

It may also be advantageous to address several traffic safety issues simultaneously. The *El Protector* program developed by the California Highway Patrol raises awareness in Latino communities about basic traffic laws, prevention concepts, impaired driving, and occupant restraint use.[46] The program has been implemented in several Latino communities nationwide. In Elgin, Illinois, this program was credited in part with decreasing DUI arrests among Latino residents from 63% in 1992 to 49% in 1993, as well as a 29% decrease in tickets issued to Latino residents for nonuse of child safety seats.[65]

* Primary laws allow police to stop motorists solely for being unbelted, secondary laws permit police to ticket unbelted motorists only if they are stopped for other reasons.

Make transportation environments safer

Efforts to improve traffic safety often focus specifically on community or individual education, which has been shown to be less effective than environmental approaches. Evaluation studies have shown that interventions that educate pedestrians have rarely improved road-crossing behavior, despite improvements in knowledge, and they have not been effective in reducing injury rates. However, area-wide traffic changes have resulted in decreased injury rates.[45]

Target highest-risk groups

Race/ethnicity, age, gender, and SES have a significant association with traffic safety behavior and rates of injury. Efforts should be specifically targeted toward people of color who are also of lower SES, male, and young. Efforts should address the effects of other high-risk behaviors, which often co-occur with impaired driving and seat belt nonuse.

Compared to all other ethnic groups, American Indians fare significantly worse across traffic safety outcomes and incidence of motor vehicle fatalities. However, possibly because American Indians are a small population group relative to the U.S. population, and there is less information on American Indians' traffic behaviors and attitudes, fewer traffic safety efforts specifically target American Indians. Continued efforts within this community are critical, and interventions should take into account the particular risks related to alcohol impairment.

Develop culturally appropriate strategies

It is widely recognized that public health and safety efforts that take into account the cultural norms, preferences, history, and experiences of specific ethnic groups often have greater success within those groups than do efforts designed for the population at large. For example, according to the National Medical Association, national public information campaigns that have not been targeted specifically to African Americans have not been effective in changing this group's traffic safety behavior. [23]

Research has indicated that attempts to improve traffic safety outcomes need to be culturally appropriate in design and implementation. For example, Latino communities have reported that traffic safety approaches should pay particular attention to language issues in addition to being family-oriented, highly personalized, and non-confrontational.[46] Findings from a pilot test of *Corazón de mi Vida*, an effort to increase child restraint use in Latino communities, indicates that the most effective child passenger safety technicians are those who can connect culturally and linguistically with the community.[66] It is also important to recognize diversity within each ethnic group. For example, programs specifically targeting Latinos should consider differences in individuals' language preferences, literacy levels, acculturation, country of origin, and length of time in the U.S.[46]

In addition, the historical experiences of African Americans, American Indians, and Latinos with U.S. government institutions may lead to mistrust of these institutions. Care should be taken to earn the trust of these communities. For example, while education efforts should be coupled with active enforcement of laws for more effectiveness,[12] particular attention should be paid to preventing differential enforcement and other acts of racial profiling.[23]

Involve diverse partners

A broad range of partners is needed for traffic safety efforts to be comprehensive, community-based, and culturally appropriate. These may include law enforcement officers, educators, city planners, media representatives, community leaders, or physicians, as well as national organizations such as NHTSA. Youth of color also have an important role to play as peer educators and spokespersons in traffic safety initiatives. Whenever possible, people of color should play a lead role in reaching communities of color on traffic safety issues, and special emphasis should be placed on parents' roles in communicating about and modeling safe behaviors.[31], [23]

V. CONCLUSION

This paper highlights major traffic safety needs within specific communities of color, but ongoing research is needed. The traffic safety behaviors and trends within communities of color continue to change as the communities themselves change, and ongoing data collection and analysis are necessary to inform interventions and efforts. More research is specifically needed to understand past traffic safety successes (such as the decreases in impaired driving or increases in seat belt use that have occurred across ethnic groups) so that these successes can be extended. Similarly, evaluations of current interventions are needed, particularly for comprehensive and longitudinal studies. Finally, there is great need for research distinguishing the effects of race/ethnicity versus the effects of SES on traffic safety outcomes.

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