

An examination of risk factors associated with worldwide sudden cardiac death rates in children

Análisis de los factores de riesgo asociados con las tasas mundiales de muerte súbita cardíaca en niños

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ARTICLE INFORMATION

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There are many programs and research studies within the United States that are currently in place to try and both identify and possibly eliminate potential risk factors of various life-threatening illnesses. Lifestyle or unhealthy living is a factor which may have a direct influence on the possibility of one developing heart disease and other negative health outcomes. It is therefore possible that certain types of unhealthy behaviors may be associated with identifiable and unidentifiable risk factors capable of increasing the probability of diagnoses with one or more of the top ten disease killers or preventable causes of death in America. Sudden cardiac death (SCD) is a sudden, unexpected death caused by loss of heart function (sudden cardiac arrest)¹. SCD is the largest cause of natural death in the United States, causing about 325,000 adult deaths in the United States each year. SCD is responsible for half of all

heart disease deaths¹. SCD occurs most frequently in adults in their mid-30s to mid-40s, and affects men twice as often as it does women. This condition is rare in children, affecting only 1 to 2 per 100,000 children each year¹. Sovari² reported that more than 7 million lives are lost to SCD worldwide each year, which may include over 300,000 in the United States.

The purpose of the research was to examine the relationship between identifiable risk factors which may be associated with children diagnosed with heart disease.

Recent research has shown that there is a definitive link between children's health status, race, poverty, and racial/ethnic disparities³. That was why this research also aims to examine both the prevalence and significance of potential health determinants in children.

A large randomly drawn sample (N=524,581) of both sexes, ages 5 to 12 was examined in this research study.

The risk factors which were examined were Minority Status (MS), Disease Prevalence (DP), Socio-economic Status (SES), and Heart Disease Risk (HDR) in Children's groups. A Chi-Square Test for Association was conducted to examine their asso-

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ciation.

The Healthcare Cost and Utilization Project⁴ data examined in this research study were collected from 46 U.S. states. Of the total sample, 31% represented children who resided within economically disadvantaged communities. Ethnicity and origin are shown in the **figure**. 53% of the children were classified to a minority ethnic group, 47% of the children were males (n=244,553), and 53% of the children were females (n=280,028).

The results from this research found that there were statistically significant associations between specific variables of interest. Statistically significant associations were based on the results of the Chi-Square Test for Association Analysis ($\alpha=0.05$). The Chi Square Test for Association produced the following statistically significant associations: DP and SES ($p<0.001$), MS and DP, ($p<0.001$), HDR and MS, ($p<0.001$), and HDR and SES, ($p<0.001$).

The strength of association was tested using a Cramer's V statistical analysis method which is applied when conducting a Chi Square analysis for greater than 2 x 2 tables. Very strong statistically significant relationships were based on results of the Cramer's V statistical analysis (Cramer's $V \geq 0.35$, $\alpha=0.05$), and were as follows: DP and SES (Cramer's $V = 0.35$), MS and DP, (Cramer's $V = 0.66$), HDR and MS, (Cramer's $V = 0.68$), and HDR and SES, (Cramer's $V = 0.93$).

The findings from this research study provide rationale for the need for health and medical person-

nel cultural competence training and awareness and also the need for special outreach initiatives to ensure and maintain the health of children in America and around the world. It is possible that more hospitals and health facilities around the world can share ideas on how to better train health and medical staff members to promote cultural competence across health systems.

The issue of healthcare access in both economically disadvantaged and impoverished communities could also be focused on more in order to improve the delivery of health services to children's groups around the world. In 2013, The Hallmark Health System produced a report which fully discusses many of the issues and factors associated with negative health outcomes for children, in addition to proposing the need for community benefit health needs assessments in order to determine how to more effectively approach children's groups to deliver quality care⁵. Such a strategy may not only lead to better ways of identifying children's health issues, but also more effective measures to apply in order to reduce heart disease risk and other forms of disease prevalence among children's groups.

CONFLICTS OF INTEREST

Ninguno.

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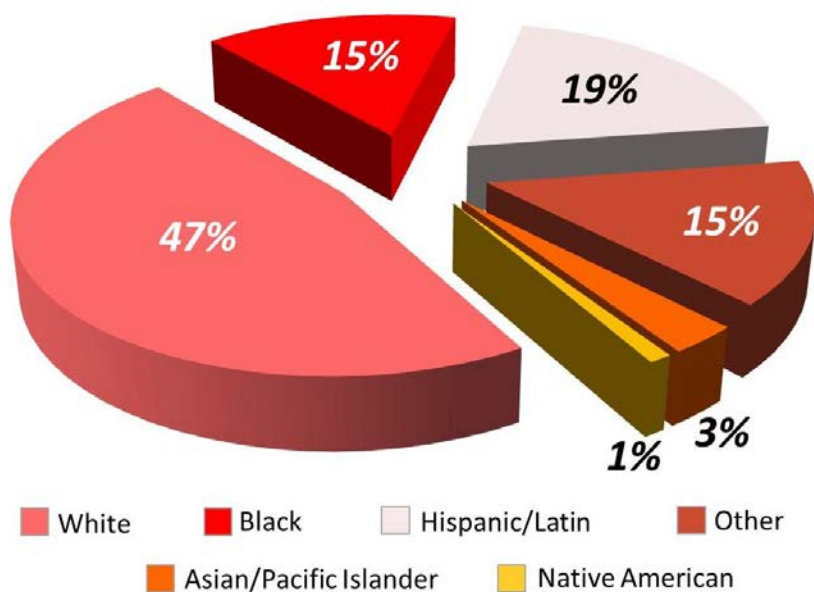


Figura. Distribución étnica de los casos estudiados.

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