



Association of Stress Factors with Perceived Health: Data from North Carolina Behavioral Risk Factor Surveillance Surveys (NC BRFSS)

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ABSTRACT

Recent data (2006-2008) from the North Carolina Behavioral Risk Factor Surveillance System (BRFSS) were analyzed to examine the perceived general health and factors associated with stress. Both physical health and mental health are significantly correlated with variables affecting stress and quality of life, such as having enough rest, emotional support and participating in physical activities.

Next, disparities in health and stress factors were examined. More minority respondents reported poor/fair general health than whites. More minority respondents reported stress factors, such as obtaining less emotional support, participating less in physical activities, giving care to a family member or friend with long term illness or disability, and not having health insurance.

INTRODUCTION

Perceived general health is distributed unequally across regions, income, education, and race/ethnicity. The Behavioral Risk Factor Surveillance System (BRFSS), a random telephone survey of adults sponsored by the Centers for Disease Control (CDC), collects data on US health and risk factors for each state. The North Carolina BRFSS is conducted annually in all counties of the state.

This study investigated disparities in self-rated general health and stress factors affecting physical and emotional wellness in North Carolina. We examined relationships between physically and emotionally healthy days and perceived general health, and between stress factors, such as enough rest, emotional support and physical activities. We further examined the disparities in stress factors between different race/ethnicity groups.

METHODS

The data from NC BRFSS were aggregated into a 3-year interval (2006-2008) to obtain stable results for analyses of demographic subgroups. The BRFSS has a complex sampling design based on the various strata of the US population. A statistical software package, SUDAAN, was used to adjust sample data into a valid representation of these population strata (Research Triangle Institute, 2002).

Variables analyzed:

- ❖ **Perceived general health:** self-rated health on a scale from 1 (excellent) to 5 (poor)
- ❖ **Physical health:** reported the number of days physical health not good during the last 30 days (0-30days)
- ❖ **Mental health:** reported the number of days mental health not good (0-30days)
- ❖ **Enough rest:** reported the number of days not having good rest (0-30days)
- ❖ **Emotional support:** getting emotional/social support when needed on a scale from 1 (always) to 5 (never)
- ❖ **Exercise:** having participated in physical activities in the past month (yes or no)
- ❖ **Care giving:** having given care to a family member or friend with long term illness or disability in the past month (yes or no)
- ❖ **Health insurance:** having health insurance (yes or no)

RESULTS

Perceived general health and the days with poor physical and mental health

- ❖ Perceived general health was significantly correlated with the number of days with poor physical health ($r=.56, p<.0001$) and with the number of days with poor mental health ($r=.27, p<.0001$).

Physical and mental health and stress variables

- ❖ Variables affecting stress and quality of life are significantly correlated with physical and/or mental health:
 - **Having enough rest** ($r=.26, r=.31$; physical, mental, respectively; $p<.0001$).
 - **Having emotional/social support** ($r=.17, r=.25$; $p<.0001$).
 - **Having participated in physical activities vs. no physical activities** (3.0 vs. 7.2 days of poor physical health ; 3.2 vs. 5.4 days of poor mental health , $p<.05$).
 - **Respondents who provided care to a family member or friend with a long-term illness or disability** had more days with poor physical and mental health than those who did not (4.1 vs. 3.9 days; 4.7 vs. 3.4 days; $p<.05$).
 - **Those with health insurance** had fewer days with poor mental health than **those without health insurance** (3.4 vs. 4.9 days; $p<.05$).

Disparities in general health and stress variables by race/ethnicity

- ❖ More minority respondents (African American 21.6%; Hispanic 20.0%; Multiracial 29.1%) reported **poor/fair general health** than whites (15.7%).
- ❖ More minority respondents (African American, Hispanic, Other, & Multiracial) as compared to white respondents, reported: ($p<.05$)
 - **Rarely or never getting emotional/social support when needed** (9.9%, 14.9%, 12.4%, & 17.5% vs. 5.5%)
 - **Less physically activities** (70.6%, 74.2%, 74.1% & 62.7% vs. 78.8%)
 - **Not having health insurance** (20.2%, 23.6%, 24.7% & 36.7% vs. 11.7%)
- ❖ More African American respondents reported to have **given care to a family member or friend with long term illness or disability** than whites (24.2% vs. 21.6%).

	Physical health	Mental health	Enough rest	Emotional support
Physical health	-			
Mental health	0.42***	-		
Enough rest	0.26***	0.31***	-	
Emotional support	0.17***	0.25***	0.18***	-
Exercise	0.28***	0.19***	0.13***	0.15***

Table 1. Correlations between Physical health, Mental health, Enough rest, and Emotional support (***) $P <.001$

	All	White	African American	Hispanic	Other	Multiracial
General health (% Poor/fair health)	18.1	15.7	21.6*	20.0*	21.8*	29.1*
Emotional support (% Rarely/never)	7.7	5.5	9.9*	14.9*	12.4*	17.4*
Exercise (% Yes)	75.8	78.7	70.6*	74.2*	74.1	62.7*
Care giving (% Yes)	20.7	21.6	24.2*	6.6*	19.4	27.1
Health insurance (% No)	18.1	11.7	21.2*	23.6*	24.7*	63.6*

Table 2. Stress Variables by Race/Ethnicity, Percentages (* $P <.05$ Minority groups compared with White)

DISCUSSION

- ❖ Self-rated general health is significantly correlated to the reported number of days of poor physical health in the past month and, to a lesser extent, to the number of days of poor mental health.

- ❖ Stress variables that affect quality of life are significantly associated with the number of days of poor physical and mental health: i.e., having enough rest, having emotional support, participating in physical activities.

- ❖ Those who reported giving care to a family member or a friend of long term illness or disability had more days of poor physical and mental health. Not having health insurance was related to the number of days of poor mental health, but not to the number of days of poor physical health (as defined here).

- ❖ A higher proportion of minority people reported fair to poor health than white. Stress factors affecting general health are reported more often among minorities than whites.

- ❖ Minorities reported receiving less emotional/social support, and participating less in physical activities. Higher proportions of African Americans reported giving care to a family member or a friend with long term illness or disability than whites.

Lastly, more minority people were without health insurance than whites.

- ❖ These results show stress factors indeed are related to general health, including mental and physical health. Further, stress factors disproportionately affect minorities. Public health and community programs that alleviate stress should have an impact on physical and mental health, e.g. emotional/social support, physical exercise, care giving, and health insurance.

REFERENCES

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