

Socio-Cultural Determinants of Physical Activity among African American and White Female Adolescents

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Introduction

- Low physical activity is especially a problem for girls, particularly African American female adolescents.
 - Male adolescents are more likely than female adolescents (43.8% v. 27.8%) to meet recommended levels of physical activity.
 - African American female adolescents have the lowest levels of recommended physical activity (79% do not meet current guidelines for physical activity compared to 64% among all adolescents).



Purpose of the Study

- To examine the influence of sociocultural factors on physical activity behavior among a sample of African American and White female adolescents:
 - **Family Level**
 - maternal control, maternal support, mother-child communication, and family cohesion
 - **Community Level**
 - religiosity, defined as attendance at religious services and religious youth activities
- To explore the influence of race/ethnicity on the relationships of these sociocultural factors to physical activity behavior in this sample.

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Research Questions

- 1. Is maternal control, maternal support, mother-child communication, family cohesion, and religiosity associated with moderate to vigorous physical activity among African American and White female adolescents?**
- 2. Does race influence the strength of the relationship between maternal control, maternal support, mother-child communication, family cohesion, religiosity, and female adolescents' physical activity behavior?**

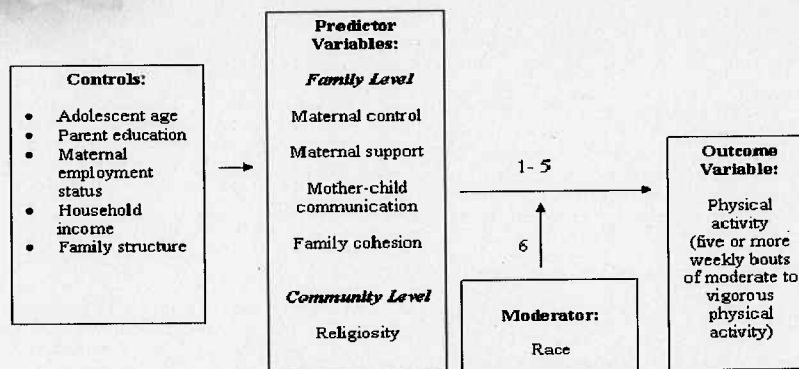
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Theoretical Framework

- The ecological systems model (Bronfenbrenner, 1986) guided this study.
- Traditional ecological models predict influences of variables measured at four typological nested levels:
 - **Individual level: psychological and biological variables of the individual;**
 - **Family level: family and friends;**
 - **Community level: schools, churches; and**
 - **Societal level: social and cultural norms.**

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Figure 1. Conceptual Model



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Sample

- Secondary data source: National Longitudinal Study of Adolescent Health – Wave I
- Sample:
 - **2,428 female adolescents:**
 - 736 African American female adolescents
 - 1,692 White female adolescents
- The mean age = 16 years
- 884 female adolescents engaged in five or more bouts of physical activity per week
 - **37% of African American female adolescents in sample**
 - **36% of White female adolescents in sample**

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Data Analysis Plan

- Data screening, variable preparation and analyses:
 - SPSS
 - STATA(SE)
- Analytic Strategies:
 - **Descriptive Statistics**
 - **Bivariate correlations**
 - **Logistical regression**
- Odds ratios reported for logistic regression analyses.


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Measures

- Predictor variables (all based on adolescent reports):
 - **Maternal control:** alpha = .61 (0=low to 7=high)
 - **Maternal support:** alpha = .86 (5=low to 25=high);
 - **Mother-child communication:** alpha = .55 (0= low to 4= high)
 - **Family cohesion:** alpha = .80 (3= low to 15= high)
 - **Religiosity:** alpha = .71 (0=low to 6=high)

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Measures continued

- Outcome variable:
 - **Moderate to vigorous physical activity (MVPA):** dichotomous (5 or more bouts vs. 4 or fewer bouts of MVPA per week)
- Moderator variable:
 - **Race** (African American [reference category] and White)
- Control Variables:
 - **Adolescent's age**
 - **Parent education (parent and adolescent report)**
 - **Maternal employment status (parent report)**
 - **Household income (parent report)**
 - **Family structure (adolescent report)**

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Results: Question 1

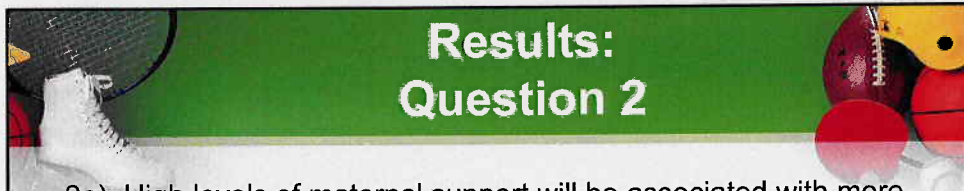
1a) High levels of maternal control will be associated with more MVPA among all female adolescents.

- **Supported. Every unit increase in maternal control was significantly associated with a 10% increased likelihood of MVPA among all female adolescents ($OR = 1.10, p \leq .01$).**

1b) High levels of maternal control will be associated with more MVPA for African American and White female adolescent subsamples.

- **Partially supported. Every unit increase in maternal control was significantly associated with a 12% increased likelihood of MVPA for White female adolescents only ($OR = 1.12, p \leq .05$).**

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Results: Question 2


2a) High levels of maternal support will be associated with more MVPA among all female adolescents.

- **Not supported. Maternal support was not significantly associated with MVPA among all female adolescents**

2b) High levels of maternal support will be associated with more MVPA for African American and White female adolescent subsamples.

- **Not supported. Maternal support was not significantly associated with MVPA for African American or White female adolescents.**

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Results: Question 3


3a) High levels of mother-child communication will be associated with more MVPA among all female adolescents.

- **Not supported. Mother child communication was not significantly associated with MVPA among all female adolescents.**

3b) High levels of mother-child communication will be associated with more MVPA for African American and White female adolescent subsamples.

- **Partially Supported. Every unit increase in mother-child communication was significantly associated with a 33% increased likelihood of MVPA for African American female adolescents only ($OR = 1.33, p \leq .01$).**

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Results: Question 4


4a) High levels of family cohesion will be associated with more MVPA among all female adolescents.

- **Not supported. Family cohesion was not significantly associated with MVPA among all female adolescents.**

4b) High levels of family cohesion will be associated with more MVPA for African American and White female adolescent subsamples.

- **Not supported. Family cohesion was not significantly associated with MVPA for African American or White female adolescents.**

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Results: Question 5


5a) Higher levels of adolescent religiosity will be associated with more MVPA among all female adolescents.

- **Not supported. Religiosity was not significantly associated with MVPA among all female adolescents.**

5b) High levels of adolescent religiosity will be associated with more MVPA for African American and White female adolescent subsamples.

- **Partially supported. Among African American female adolescents only, every unit increase in religiosity was significantly associated with a 28% increased likelihood of MVPA ($OR = 1.28, p \leq .001$).**

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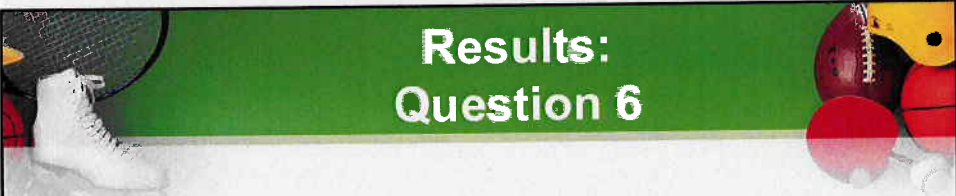


Results: Question 6

6a) The relationship between maternal control and physical activity behavior will be stronger for African American female adolescents compared to White female adolescents.

- **Not supported. There was no significant interaction between race and maternal control on adolescent physical activity behavior**

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Results: Question 6

6b) The relationship between maternal support and physical activity behavior will be stronger for African American female adolescents compared to White female adolescents.

- **Not supported.** There was no significant interaction between race and maternal support on adolescent physical activity behavior.

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Results: Question 6

6c) The relationship between mother-child communication and physical activity behavior will be stronger for African American female adolescents compared to White female adolescents.

- **Supported.** The relationship between mother-child communication and physical activity behavior was stronger for African American female adolescents than for White female adolescents.

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Results: Question 6

6d) The relationship between family cohesion and physical activity behavior will be stronger for African American female adolescents compared to White female adolescents.

- **Not supported. No significant interaction was found.**

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Results: Question 6—cont.

6e) The relationship between religiosity and physical activity behavior will be stronger for African American female adolescents compared to White female adolescents.

- **Supported. The relationship between religiosity and physical activity behavior was stronger for African American female adolescents than for White female adolescents.**

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Summary

- This study addressed and expanded the ecological model:
 - **Family level**
 - maternal parenting
 - mother-child communication
 - **Community level**
 - religious institutions

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Limitations

- Results are based on associations not causations
- Measurement of key concepts
- Potential interview bias
- Limited to African American and Whites
- Recommendations for MPVA were based on old guidelines (30 minutes per day vs. 60 minutes)

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Significance

- Programmatic and Policy Implications:
 - *Strategies to engage female adolescents in physical activity, particularly African American female adolescents, should focus on increasing mother-child communication and girls' involvement with religious institutions.*
- Future research should explore:
 - *how family and community variables are related to physical activity behavior among other racial/ethnic groups*
 - *the role of fathers*