Title: The role of adherence to gender-typical behavior in adult intimate partner violence perpetration: a nationally representative longitudinal data analysis

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Abstract:
Intimate partner violence (IPV) perpetration is related to gender norms, specifically norms of masculinity. This study developed an empirical measure of adherence to gender-typical behaviors (AGB) for respondents at each of the four waves of Add Health in an effort to quantitatively capture individuals' gender typicality. We tested the hypothesis that AGB at each wave would be associated with men's IPV perpetration at Wave 4 (ages 24-32), but not women's. For men, AGB at Wave 1 (ages 12-18), but not Waves 2, 3 or 4, was significantly associated with IPV perpetration at Wave 4 after controlling for age, race, family structure, fighting, and childhood experience of abuse. For women, AGB at any wave was not significantly associated with IPV perpetration. This research emphasizes the role that gender and masculinity play in men's perpetration of IPV and reinforces the importance of adolescence as a critical period for socialization of gender roles.

Introduction

Violence in intimate partnerships continues to be a significant public health problem (Black et al., 2011). Twenty-eight percent of women experience relationship violence at some point in their lifetime (Coker et al., 2002), and approximately 1.3 million women in the U.S. are assaulted by an intimate partner each year (Tjaden & Thoennes, 2000). In a nationally representative sample of young adults, 44% of women who were ever partnered had experienced violence from a partner at some point in their life (Halpern, Spriggs, Martin, & Kupper, 2009). Women who experience violence are more likely to suffer from a variety of physical and mental health problems (Beydoun, Beydoun, Kaufman, Lo, & Zonderman, 2012; J. Campbell et al., 2002; J. C. Campbell, 2002; Coker et al., 2002; Plichta, 2004). IPV can be perpetrated by either a man or a woman (Bair-Merritt et al., 2010), and some evidence shows that male and female victims both experience similar levels of emotional and physical harm as a result of the violence (Coker et al., 2002). But, generally women are still found to be twice as likely to experience physical and sexual abuse (Coker et al., 2002).

IPV is an expression of power within a relationship and power dynamics in romantic relationships are closely related to gender relations (Connell, 1987). Research has shown that some men utilize violence in relationships as a way to assert their power or dominance over women (Connell, 1995a, 1995b; S. L. Dworkin, Dunbar, Krishnan, Hatcher, & Sawires, 2011; S.L. Dworkin, Hatcher, Colvin, & Peacock, 2013). Violence and norms of masculinity are closely linked (Bourgois, 1996). Often, men are socialized to defend their honor through shows of aggression or force. For some, a man's place in the social hierarchy is partly determined by his ability to demonstrate his masculinity (Connell, 1995b). In the context of romantic relationships, men may feel social pressure to be the head of the household and provide financially to be perceived as masculine (Courtenay, 2000). Men who feel that their family role is challenged may respond by demonstrating other "masculine" traits as a way to assert their power (Moore & Stuart, 2005). Unfortunately, some men use shows of force against a female partner to demonstrate their masculinity and assert their power.

Prior studies have examined the extent to which men's attitudes about gender equality (Jenkins & Aube, 2002; Schubert, Protinsky, & Viers, 2002) and men's stress about being perceived as masculine (Copenhaver, Lash, & Eisler, 2000; Jakupcak, Lisak, & Roemer, 2002) are associated with perpetration of violence. While these are important contributions, they do not assess whether IPV perpetration is associated with the extent to which a man behaves in ways that are consistent with his gender. In other words, are men who more often act in ways typical for men more likely to perpetrate IPV than men who are less adherent to gender-typical behaviors? Since masculinity and violence are linked, we would expect men who generally behave in a gender-typical fashion (i.e. more masculine) to be more likely to perpetrate violence. Additionally, women whose behaviors are more masculine, that is more closely aligned with typical male behavior instead of typical female behavior, may also be more likely to perpetrate violence.

In this study, we use innovative empirically-based measurement techniques with data from the National Longitudinal Study of Adolescent Health (Add Health) to examine the

relationship between adherence to gender-typical behaviors and intimate partner violence perpetration. We hypothesized that adherence to gender-typical behaviors would be a significantly associated with IPV perpetration for males, but there would be no association for females. This study is novel because it is the first to examine longitudinally the role of adherence to gender-typical behaviors in adolescence and young adulthood in IPV perpetration in adulthood for both men and women. The longitudinal approach allows us to address the importance of life stage timing of gender role adherence in relation to IPV perpetration in adulthood.

Data and Methods
We use data from all four waves of data collection from Add Health. In 1994-95 (Wave 1), Add Health recruited a school-based nationally representative sample of adolescents in grades 7-12 and followed them up in 1996 (Wave 2), 2001-02 (Wave 3), and 2008-09 (Wave 4). At Wave 4, the participants were between the ages of 24 and 32. For the analyses presented here, we use only those participants who were interviewed at all four waves (n=9421). Our study relies exclusively on the longitudinal survey data, including demographic, attitudinal, and behavioral items. For more details on the Add Health study design, see Harris 2011 (K.M. Harris, 2011).

Measure of adherence to gender-typical behavior
We define the construct of adherence to gender-typical behavior (AGB) as the degree to which males and females follow the behaviors that individuals of their gender commonly perform. We consider 'behavior' to be broad: it includes both actions performed by the individual (e.g., exercising) and states of being (e.g., getting sad). Rather than utilizing a scale that was validated with a different population, we chose to develop an empirically driven measure based on the Add Health data. To measure adherence to gender-typical behavior at each Wave, we used a multi-step process similar to one developed by Cleveland and colleagues (Cleveland, Udry, & Chantala, 2001). Cleveland et al. also used Add Health data to create their measure, but only used a more limited set of variables and only used Waves 1 and 2.

The initial process involved identifying the variables that are the most discriminant between males and females and then using those variables in a logistic regression model to create an individual's predicted probability of being a male or female. First, for each Wave we began with a list of all variables derived from the complete set of questions asked of the participant during the in-home survey. We excluded variables that had more than 300 missing observations in order to create a measure that would be valid for the greatest number of participants. Then, we excluded variables that were: a) typically unique to one gender (e.g., menstruation or playing football), b) demographic (e.g., race), or c) passive (e.g., reports about how a friend behaves). With the remaining variables, we conducted t-tests (continuous variables) and chi-square tests (categorical variables) to compare males and females. We then ordered the p-values to identify the approximately 50 variables that showed the most statistically significant differences between males and females.   Using this set of variables as independent variables, we modeled the variable 'biological sex' (1=male, 2=female) using logistic regression.

$$logit(\theta) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 \ldots + \beta_{50} x_{50}$$

where θ is the dichotomous variable 'biological sex' and each x is one of the 50 final variables

Using manual backwards stepwise regression, we removed variables one-by-one that had the least significant contribution to the explanatory power of the model. We removed variables until the remaining variables were significant at p<.0001. Using this criterion for each wave, 25 variables remained at Wave 1, 27 variables remained at Wave 2, 23 variables remained at Wave 3, and 22 variables remained at Wave 4 (final set of variables for each wave available upon request). For each wave, we used the final set of 20-something variables, using the same model as above, to create predicted probabilities for each participant. This produced a model-based predicted probability that the individual observation is a *male*. A predicted probability score of 0.99 would indicate a 0.99 probability that the individual is a male (and 0.01 probability they are female), whereas a score of 0.01 would indicate a 0.01 probability of being a male (and a 0.99 probability of being a female). Therefore, for men, a high probability score indicates adherence to male-typical behavior, and for women a low probability score indicates adherence to female-typical behavior.

We used multiple methods for assessing the validity of this measure. First we assessed the distribution and average score at each Wave. We found, as expected, that the distribution for males is left-skewed and for females is right skewed. The majority of males and females are concentrated near the extremes, with decreasing numbers of individuals having a probability closer to the other biological sex. Additionally, we found that the average predicted probability of being male at each wave was approximately .75 for males and .25 for females (see Table 1.). This indicates that the measure is performing as expected since males have a higher probability of being male than females and the averages tend to be roughly equidistant from the total mean of 0.50.

[TABLE 1. HERE]

We also used a receiver operating characteristic (ROC) analysis to examine how our measure was performing, the same method that Cleveland et al. used to validate their measure (Cleveland et al., 2001). For each wave, the area under the ROC curve (i.e., probability of a correct prediction) is between 0.86 and 0.90 (see Figure 3.). This is consistent with other similar measures (Cleveland et al., 2001).

After these initial validation analyses, we transformed the measure to a) better match the theoretical concept of gender adherence, and b) account for the extreme skewness of the data to allow for future analyses. Because adherence to gender norms is a strategy for positioning oneself in the social hierarchy (Connell, 1995b; Courtenay, 2000), we ranked males and females separately for each wave on their Adherence to Gender-typical Behavior score such that a rank of 1 indicated the individual with the highest Adherence to Gender-typical Behavior score (for both males and females, this indicates the most adherence to *male* gender-typical behavior). This resulted in a measure for both males and females where the lower your rank number, the more closely your behaviors aligned

with 'male' behaviors and the higher your rank number the more closely your behaviors aligned with 'female' behaviors. Subsequently, we divided each male's rank at each Wave by the number of males with valid longitudinal weights at that respective Wave and then did the same for females. We subtracted the number from 1 in order to end up with a percentile where a higher value indicated greater adherence to *male* gender-typical behavior. A percentile score of 0.05 would indicate strong adherence to female gender-typical behavior and 0.95 would be strong adherence to male gender-typical behavior. We call this the Adherence to Gender-typical Behavior (AGB) percentile.

Measure of intimate partner violence perpetration

The main outcome for this analysis is intimate partner violence perpetration at Wave 4 (ages 24-32). Each participant was asked a series of questions about their current or most recent romantic/sexual relationship. If there were multiple current partners, respondents reported on their most serious current relationship. We included both other-sex and same-sex partnerships in these analyses because we hypothesize the same association for both types. Intimate partner violence perpetration was assessed using three separate questions in the Wave 4 survey:

- Q1: How often have you threatened [partner] with violence, pushed or shoved (him/her), or thrown something at (him/her) that could hurt?
- Q2: How often have you slapped, hit, or kicked [partner]?
- Q3: How often have you (insisted on or made [partner] have sexual relations with you when (he/she) didn't want to?

Participants were asked to respond with the number of times this happened in the past year, or if none, whether it had happened ever. From these three variables, we constructed a dichotomous IPV perpetration measure where 0='never' to all questions and 1='at least once' to any of the 3 questions.

Control variables

We controlled for various factors that have been identified as predictors of IPV perpetration in the literature. First, because measures of getting in a fight were included in the final set of variables to create the Adherence to Gender-typical Behavior measure, we controlled for fighting. Fighting was measured at Wave 1 and 2 by asking the respondent whether they had ever gotten in a physical fight in the past 12 months (0=never, 1=once, 2=more than once). At Wave 3, the only fighting variable included in the final set of variables was, *"How often did you take part in a physical fight where your group of friends was against another group?"* (0=Not at all; 1=1 or 2 times; 2=3 or 4 times; 3=5 or more times). Because of the range in ages represented at Wave 4, we controlled for integer age at Wave 4. We also controlled for race/ethnicity using a five-category mutually exclusive race classification from self-reports at Wave 1: White, African-American/Black, Asian/Pacific Islander, American Indian, and Hispanic. For more details on how race is measured in Add Health, see Udry et al. 2003 (Udry, Li, & Hendrickson-Smith, 2003).

We controlled for three types of family structure using indicator variables from Wave 1. We used separate indicator variables for those with a) 2 biological parents or 2 adoptive parents in the home, b) 1 biological parent and one non-biological parent at home, and c)

1 single parent. These three variables function as dummy codes, and adolescents who do not fit into any of those categories are captured as the referent category. For more details on the family structure measure construction in Add Health, see Harris 2003 (K.M. Harris, 1999). The final set of control variables was related to experiences of abuse in childhood. These were retrospective self-reports by respondents at Wave 3. They were asked, "by the time you started 6th grade, how often had your parents or other adult care-givers:

- left you home alone when an adult should have been with you?" (Left Alone)
- not taken care of your basic needs, such as keeping you clean or providing food or clothing?" (Basic Needs)
- slapped, hit, or kicked you?" (Slap/Hit/Kick)
- touched you in a sexual way, forced you to touch him or her in a sexual way, or forced you to have sexual relations?" (Sexual Abuse)

Respondents were asked to report how often each of these things happened to them (0=never, 1= time, 2=2times, 3=3-5 times, 4=6-10 times, 5=more than 10 times). For sexual abuse, we constructed a variable that indicated whether or not they had ever been abused in this way (0=not sexually abused; 1=sexually abused).

Analysis

We provide descriptive statistics for key variables, including frequency distributions and means, to characterize the study population. All analyses were conducted in SAS version 9.3 using survey commands to account for the complex survey sampling design. Multivariate logistic regression was carried out for males and females separately in order to assess the association between IPV perpetration at Wave 4 and AGB percentile at each Wave (Model 1). We subsequently add control variables: Model 2 – fighting variables, Model 3 – demographic variables, Model 4 – family structure variables, and Model 5 – childhood abuse variables. Examining the effect of AGB percentile for each subsequent model allowed us to assess the unique contribution of AGB percentile to predict IPV perpetration at Wave 4. In all analyses, we used longitudinal weights to assess only individuals with observation at all four data collection time points and to adjust for unequal probability selection into the sample and nonresponse over time. Additionally, we adjusted our variance estimates for clustering at the primary sampling unit and stratification by region.

Results

Overall, 14.3% of men and 19.1% of women reported perpetrating some form of violence in their current or most recent relationship (see Table 2.). The most common type of violence for both men and women was threatening their partner or pushing/shoving their partner. Men were more likely than women to perpetrate sexual violence.

[TABLE 2. HERE]

Average AGB percentile and IPV perpetration

Looking at males and females separately, we compared the average AGB percentile at each wave for those who are IPV perpetrators and those who are not (Table 3.) For males, we found that those who perpetrate IPV at Wave 4 have a Wave 1 AGB percentile

that is .08 points higher than those who did not perpetrate violence. The AGB percentile disparity between male perpetrators and non-perpetrators is halved in each subsequent wave and is only 0.01 for AGB percentile at Wave 4. For females, we see no noticeable disparity between perpetrators and non-perpetrators. The widest AGB percentile disparity occurs at Wave 2 where we see a difference of 0.02. For both males and females, there are no differences between perpetrators and non-perpetrators for their AGB percentile in adulthood (Wave 4).

[TABLE 3. HERE]

Multivariate Model
We sought to examine the role of adherence to gender-typical behavior on IPV perpetration using multivariate logistic regression models. We first regressed the dichotomous IPV perpetration variable on each measure of AGB percentile, then added in sets of control variables.

For males (Table 4.), we found that only AGB percentile at Wave 1 (age 12-18) was significantly (p<.01) associated with IPV perpetration at Wave 4 (age 24-32). AGB percentile at Wave 2, 3 and 4 were not significantly related to IPV perpetration when controlling for AGB percentile at other waves. We then controlled for reports of general fighting at each wave. When controlling for other variables in the model, we found that reporting a physical fight at Wave 1 is significantly associated with (p<.05) IPV perpetration, but that reporting a physical fight at Waves 2 or 3 was not. We then added in demographic controls (age and race), controls for family structure and for reports of childhood abuse. Model 5, with all controls, found that AGB percentile at Wave I remains significantly related to IPV perpetration at p<.01. The only other significant covariates in the model were Black/African-American race (p<.05) and reports of being left alone as a child (p<.05). In Model 5, we see that the effect size for AGB increased, suggesting that the effect of being left alone as a child was suppressing the positive association of AGB with IPV.

[TABLE 4. HERE]

In the model for females, we found no association between AGB percentile and IPV perpetration (Table 4.). Model 1 included only AGB percentile measures for each wave and we found no significant effect for any wave. We subsequently added in the three variables for physical fighting and found each to be significantly associated with IPV perpetration (p<.01). After adding in demographic, family structure, and childhood abuse variables in the full model, we found a significant relationship between physical fighting at Waves 1, 2, and 3 and IPV perpetration at Wave 4. Additionally, unlike the model for males, being Hispanic was a significant predictor (p<.05), as were reports of being slapped or kicked by caregivers as a child (p<.05). Notably, AGB percentile was not significant in any of our models.

[TABLE 5. HERE]

Discussion

We find that a higher percentage of women report IPV perpetration than men and that a higher proportion of women report threatening, pushing, slapping, and/or hitting their partner than men. But, sexual violence perpetration is more common among males. This fits with previous studies examining IPV perpetration by males and females by type of perpetration (Black et al., 2011).

Our data also provide evidence that adherence to gender-typical behavior in adolescence is an important risk factor for IPV perpetration later in life for males, even when controlling for other important risk factors. However, we find no differences between male perpetrators and non-perpetrators on their adherence to gender-typical behavior in adulthood (Wave 4), and none at any life stage for female perpetrators and non-perpetrators. This, in part, confirms our hypothesis that increased adherence to male-typical behavior would be a risk factor for men but not for women. The fact that adherence to gender-typical behavior in adulthood was not significantly associated with IPV perpetration for men was not hypothesized, however it supports the overarching hypothesis from Add Health that adolescence is a sensitive period that shapes later life experiences and outcomes (K. M. Harris, Gordon-Larsen, Chantala, & Udry, 2006; Lee, Harris, & Gordon-Larsen, 2009).

We believe that the lack of significant results for women is due to the fact that women are less compelled socially to adhere to the entire constellation of male and/or female behaviors. Men on the other hand, are still socially compelled to act in ways that are perceived as masculine. There has not been a social movement of equal weight to the feminist movement that has transformed men's gender roles. While there has been some loosening of the strict definition of masculinity, most men are still socially pressured to act 'manly' by playing sports, being unemotional, or avoiding caretaking behaviors/professions (Connell, 1995b). The salience of adhering to gender-typical behaviors may be much greater for men because the consequences can be great. Men who behave similarly to typical females are often subject to bullying, teasing, or violence (Dorais & Lajeunesse, 2004; Williams, 2008). Men who are not very adherent to typical behaviors for men, and instead adopt a mixture of 'female' and 'male behaviors (or all female), may be less concerned with how others view their masculinity. Therefore, any challenges to their masculinity, by their intimate partner or otherwise, will not be met with shows of force to prove their masculine status. Men who *do* adhere to male typical behaviors may be may be less willing accept challenges to their masculinity. Therefore, if an intimate partner challenges their masculine or dominant role in the family, these men may be more willing to counter that challenge with threats, violence, or abuse.

This justification does not explain why only adherence to gender-typical behavior in adolescence, not adulthood, is a significant predictor of adult IPV perpetration in men. Previous research has shown that IPV perpetration and victimization in adolescence sets individuals on a certain trajectory of violence throughout the life course (Exner-Cortens, Eckenrode, & Rothman, 2013). We also know that adolescence is a sensitive time for development of a gender (i.e., masculine or feminine) identity (Barker, 2005; Cohan, 2009; Hyde, Howlett, Drennan, & Brady, 2005). Social pressures to be masculine are

particularly salient during adolescence as young males are trying to be socially recognized as men, rather than boys (Barker, 2005). Additionally, social exclusion of young men who are feminine has been well-documented and contributes to adolescent males' desire to be perceived as masculine (Dorais & Lajeunesse, 2004; Kimmel & Mahler, 2003).

Adolescent males with high adherence to male gender-typical behavior may be the young men who are most concerned about others perceptions of their masculinity. When they engage in romantic or sexual relationship during this period, these young men may be more likely to assert their power and dominance over women through shows of force or violence. This IPV perpetration in adolescence then sets these young men on a trajectory of IPV perpetration into their adulthood (Exner-Cortens et al., 2013). By the time that men reach adulthood, their status as masculine is more well-established, by their appearance, engagement in sexual relationships with women, and possibly through their profession (Connell, 1995b). Their adherence to gender-typical behaviors in adulthood may be less important, and therefore less important for IPV perpetration. However, the roots of the IPV perpetration in adulthood in part stems from trajectories established in adolescence, precisely the time when adherence to male gender-typical behaviors is most salient for men.

Conclusion
Adolescence is a sensitive period for individual development and affects outcomes across the life course. Our research demonstrates some of the less subtle ways that experiences in adolescence can affect behaviors later in life. Future research needs to test our hypothesized mechanisms through which men's adherence to male gender-typical behaviors in adolescence may contribute to IPV perpetration in adulthood. Further, this relationship for men is based in social norms of strict adherence to cultural notions of masculinity. To change this relationship for future generations of young men, our society needs to deemphasize the importance of masculinity in the same way that the women's rights movement has deemphasized the importance of femininity for women, with a particular emphasis during adolescence.

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Table 1. *Means, standard deviations and correlations for measure of Adherence to Gender-typical Behavior (AGB) for total unweighted sample at each Wave (W).*

	Mean (SD)		Pearson Correlation Coefficients			
	Female	**Male**	**AGB-W1**	**AGB-W2**	**AGB-W3**	**AGB-W4**
AGB-W1 (n=19,836)	0.30 (0.25)	0.70 (0.24)	1.00	-	-	-
AGB-W2 (n=14,303)	0.27 (0.26)	0.74 (0.24)	0.64	1.00	-	-
AGB-W3 (n=14,272)	0.24 (0.23)	0.75 (0.27)	0.59	0.59	1.00	-
AGB-W4 (n=14,770)	0.26 (0.23)	0.73 (0.27)	0.52	0.57	0.58	1.00

Table 2. *Perpetration of violence in intimate relationships at Wave 4 (males n=4121; females n=4989)*

	Q1: Threaten	*Q2: Slapped*	*Q3: Rape*	*Any IPV Perp*
Males	9.9%	5.5%	5.0%	14.2%
Females	15.3%	12.1%	1.6%	18.7%

Note: using longitudinal weights, clustering at primary sampling unit, and stratification by region

Table 3. *Average AGB percentile at each wave by gender and Wave 4 IPV perpetration (males n=4121; females n=4989)*

	Males No IPV Perp	*Males IPV Perp*	*Females No IPV Perp*	*Females IPV Perp*
AGB percentile W1	0.49	0.57	0.50	0.49
AGB percentile W2	0.50	0.54	0.48	0.46
AGB percentile W3	0.52	0.54	0.49	0.48
AGB percentile W4	0.51	0.52	0.49	0.49

Note: using longitudinal weights, clustering at primary sampling unit, and stratification by region

Table 4: *Men's perpetration of violence in a relationship: Logistic regression results (n=4121)*

		Freq or Mean (SE)	Model 1	Model 2	Model 3	Model 4	Model 5
	Intercept		-2.431**	-2.411**	-3.139**	-3.431*	-4.160**
Wave 1 AGB Percentile		0.50 (0.29)	**0.874****	**0.675***	**0.626***	**0.621***	**0.765****
Wave 2 AGB Percentile		0.50 (0.29)	0.230	0.224	0.168	0.167	0.052
Wave 3 AGB Percentile		0.50 (0.29)	0.011	-0.092	-0.067	-0.054	-0.078
Wave 4 AGB Percentile		0.50 (0.29)	0.013	-0.023	0.099	0.079	0.117
Physical Fight at Wave 1		0.61 (0.02)		**0.188***	**0.178***	**0.176***	0.140
Physical Fight at Wave 2		0.33 (0.01)		0.013	0.024	0.016	0.019
Physical Fight at Wave 3		0.21 (0.01)		0.126	0.131	0.126	0.122
Age at Wave 4		28.0 (0.12)			0.033	0.032	0.049
Race	*White(ref)*	67.6%					
	AA/Black	14.8%			**0.462***	**0.431***	**0.497***
	Asian/PI	3.8%			0.448	0.463	0.560
	AmerIndian	1.5%			0.540	0.537	0.728
	Hispanic	12.3%			0.241	0.232	0.189
Fam Struc	*2bio/2ad*	57.8%				-0.050	0.092
	1bio+1non	15.5%				0.121	0.158
	Single Prnt	22.5%				0.079	0.143
	Other (ref)	4.2%					
Abuse	*Left alone*	1.13 (0.04)					**0.092***
	Basic needs	0.37 (0.03)					-0.092
	Slap/hit/kick	0.79 (0.03)					0.036
	Sexual abuse	4.5%					0.097

Note: using longitudinal weights, clustering at primary sampling unit, and stratification by region
*=p<.05, **p<.01

Table 5: *Women's perpetration of violence in a relationship: Logistic regression results (n=4989)*

		Freq or Mean (SD)	Model 1	Model 2	Model 3	Model 4	Model 5
	Intercept		**-1.468****	**-1.498****	0.494	0.449	-0.127
Wave 1 AGB Percentile		0.50 (0.29)	-0.039	-0.213	-0.201	-0.187	-0.201
Wave 2 AGB Percentile		0.50 (0.29)	0.005	-0.096	-0.329	-0.325	-0.197
Wave 3 AGB Percentile		0.50 (0.29)	-0.197	-0.218	-0.215	-0.192	-0.184
Wave 4 AGB Percentile		0.50 (0.29)	0.102	0.004	-0.012	-0.011	-0.044
Physical Fight at Wave 1		0.30 (0.01)		**0.380****	**0.337****	**0.322****	**0.290****
Physical Fight at Wave 2		0.16 (0.01)		**0.278****	**0.278****	**0.266***	**0.283***
Physical Fight at Wave 3		0.04 (0.00)		**0.819****	**0.794****	**0.797****	**0.776****
Age at Wave 4		27.80 (0.11)			**-0.072***	**-0.073***	-0.059
Race	*White (ref)*	68.2%					
	AA/Black	15.7%			**0.363****	**0.305***	0.275
	Asian/PI	3.15%			0.239	0.250	0.147
	AmerIndian	1.12%			0.567	0.560	0.203
	Hispanic	11.8%			**0.439****	**0.437****	**0.355***
Fam Struc	*2bio/2ad*	57.6%				0.012	0.034
	1bio+1non	15.1%				0.077	0.063
	Single Prnt	22.7%				0.265	0.192
	Other	4.6%					
Abuse	*Left alone*	1.02 (0.03)					-0.003
	Basic needs	0.25 (0.02)					-0.066
	Slap/hit/kick	0.75 (0.03)					**0.159****
	Sexual abuse	4.90%					0.333

Note: using longitudinal weights, clustering at primary sampling unit and by individual, and stratification by region
*=p<.05, **p<.01