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Early and Middle Adolescents' Autonomy Development:

Impact of Maternal HIV/AIDS

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Abstract

Progression toward autonomy is considered of central importance during the adolescent period. For young adolescents with an HIV-infected parent, there may be additional challenges. This study investigated current autonomy among early and middle adolescents affected by maternal HIV (*N* = 10**8**), as well as examined longitudinally the children's responsibility taking when they were younger (age 6 - 11; *N* = **81**) in response to their mother's illness and their current autonomy as early/middle adolescents. In analyses of self-care and family autonomy, children with greater attachment to their mothers had higher autonomy, and there was a trend for children who drink or use drugs alone to have lower autonomy. In analyses of management autonomy, attachment to peers was associated with higher autonomy. Trajectory group findings indicate that those children who had taken on more responsibility for instrumental caretaking roles directly because of their mother's illness showed better autonomy development as early and middle age adolescents. Therefore, "parentification" of young children with a mother with HIV may not negatively affect later autonomy development.

Keywords

Adolescence; Autonomy; HIV; Parentification

Early adolescence is a developmental period of rapid physical, psychological, sociocultural, and cognitive changes, during which adolescents are going through the process of establishing a sense of identity and autonomy (DiClemente, Hansen, & Ponton, 1996). The American Academy of Child and Adolescent Psychiatry and other adolescent research has identified behaviors associated with early (12 - 14 yrs.) and middle (15 - 16 yrs.) adolescence, including: realization that parents are not perfect and identification with their faults; the search for new people to love in addition to parents; frequently changing relationships; peer group influence; development of ideals and selection of role models; experimentation with cigarettes, marijuana,

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and alcohol; and experimentation with body (Conger, 1991; DiClemente, Hansen, & Ponton, 1996; Ginzberg, 1972; Marcia, 1980; Pruitt, 2000). Behaviors associated with movement towards independence in this period include: a focus on self-esteem and self-direction, refinement of gender role expectations; integration of sexual behavior and intimacy; and changes in dependency on adults (Auslander, Rosenthal, & Blythe, 2006; Harter, 1990; Maccoby, 1999; McCabe & Barnett, 2000; Steinberg, 2001). These feelings and behaviors may be challenging for any adolescent. For young adolescents with an HIV-infected parent, there may be additional challenges. In early and middle adolescence, the adolescents' primary developmental task is to form a personal identity and separate from their nuclear family (Conger, 1991; Ginzberg, 1972; Kellam, Branch, Agrawal, & Ensminger, 1975; Marcia, 1980; Super, 1990). However, there are little data on these developmental processes among minority early adolescents (e.g., Cross, 1987; Phinney, 1990), who are most likely to be affected by a parent with HIV.

Autonomy Theory and Definitions

A number of empirical and theoretical perspectives have addressed the concept that human development involves a progression from dependence on others for care and guidance to self-regulation (Sigafoos, Feinstein, Damond, & Reiss, 1988). Throughout life, autonomy advances and declines as individuals develop new competencies and changing conditions require alterations in behavior (Baltes & Silverberg, 1994). However, while progression toward autonomy is considered a component of development over most stages of the lifespan, it is considered of central importance during the adolescent period, when development of capabilities that allow for self-direction and a sense of responsibility for the self are critical for successful transition to adulthood (Allen, Hauser, Bell, & O'Connor, 1994; Sigafoos et al.). During adolescence, the development of autonomy typically accelerates because of rapid physical and cognitive changes, expanding social relationships, and additional responsibilities (Zimmer-Gembeck & Collins, 2003). Therefore, developmentally, adolescence is identified uniquely by the autonomy process (Dishion, Nelson, & Bullock, 2004). Moreover, developmental theorists consider the movement toward greater autonomy and self-initiation to be a hallmark of healthy development (Cicchetti & Cohen, 1995).

Autonomy has been defined in a number of ways (Zimmer-Gembeck & Collins, 2003), with similar themes. It has been referred to as the: process of becoming a self-governing person (Steinberg, 1990; 2002; Zimmer-Gembeck & Collins, 2003); development of a sense of individuation (Blos, 1967); ability to give direction to one's own life by defining goals, feeling competent, and being able to regulate one's actions (Noom, 1999); and freedom to carry out actions on an individual's own behalf while maintaining appropriate connections to significant others (Hill & Holmbeck 1986). It is generally conceptualized as the ability to regulate one's own behavior (Noom, Dekovic, & Meeus, 1999).

One characteristic that has been associated with better autonomy is child coping skill. For example, Masten et al. (2004) found that success in developmental tasks in emerging adulthood and into young adulthood years was related to core resources originating in childhood and emerging adulthood, including autonomy and coping skills, as well as adult support. Further, in a study of a motivational theory of children's coping designed to determine if relationship aspects--including autonomy support--would determine whether coping would be characterized by approach or avoidance, adolescents with more positive family relationships used more active coping with problems at home and school (Zimmer-Gernbeck & Locke, 2007).

There is general consensus that changes within the adolescent, and within the adolescent's environment, may lead to conflict that initiates or facilitates developmental tasks—and when

this conflict occurs within parent-adolescent relationships that are warm and emotionally accepting, healthy autonomous development is promoted (Campbell, Adams, & Dobson, 1984; Hill & Holmbeck, 1986; Steinberg, 1990). Parental support for autonomy has been associated with greater consistency in children's adjustment across social and academic domains (Bronstein, Ginsburg, & Herrera, 2005; Joussemet, Koestner, Lekes, & Landry, 2005). Dishion, Poulin, and Medici Skaggs (2000) suggested that a defining feature of maladaptive adolescent development is a process referred to as "premature autonomy," in which pubertal children disengage from the parent. Udry (1990) referred to this as a "strain toward maturity," associated with a too early detachment from parental guidance and supervision. As noted above, movement toward greater autonomy at an appropriate developmental age and initiation of appropriate autonomous skills is thought to be a hallmark of healthy development. However, Dishion et al. (2004) have noted that it can be difficult to ascertain whether **a specific** autonomy process is normative or maladaptive, and have suggested that one salient index of unhealthy development is adolescent involvement in substance use, with antisocial youth most likely to use substances (Dishion, Capaldi, & Yoerger, 1999). Although different aspects of autonomy have been identified, the development of autonomy has remained of particular interest in the research literature (Smetana, Campione-Barr, & Daddis, 2004).

Early Parentification and Autonomy

An important aspect of relationship dynamics in families with an ill parent or parents is the effect of the illness on the child's autonomy, both within the family and outside the family. Physical incapacity of a parent or parents has been shown to affect a child's autonomy in four main ways: (1) the child assumes adult roles that the parent can no longer perform; (2) the child takes on some caregiving of the ill parent; (3) the child is distanced socially from peers; and (4) school performance and/or attendance suffers (Banks et al., 2001; Broszomenyi-Nagy & Spark, 1973; Cree, 2003; Kabat, 1996; Roche & Tucker, 2003; Thomas et al., 2003). The child who assumes adult roles is frequently referred to as "parentified" (Earley & Cushway, 2002). The term the "parental child" was coined by Minuchin and colleagues (1967) to refer to children who assume parental responsibility in the home. Broszomenyi-Nagy and Spark (1973) later defined a process of "parentification" resulting from the expectation of a parental figure that a child will fulfill a parental role within the family system. This role may be instrumental (i.e., the child does tasks that would typically be done by a parent), or expressive (i.e., emotional caregiving) in that the child provides emotional support for the parent (e.g., the parent treats the child as a friend and discusses financial, emotional, or other issues for which they need support). Although Broszomenyi-Nagy and Spark's original concept was that parentification was a component of all parent-child relationships, including healthy ones, research has generally reported parentification as pathology. However, it has been argued that parentification may have positive, negative, or even no long-term effects on child development, and may be dependent on a number of factors (Barnett & Parker, 1998). More specifically, it has been suggested on the basis of clinical observations that children may suffer more from expressive (i.e., emotional caregiving) rather than instrumental caretaking roles (Earley & Cushway, 2002; Jurkovic, Jessee, & Goglia, 1991).

HIV-positive mothers have concerns about their children assuming adult roles too early due to parental illness (Brackis-Cott, Mellins, & Block, 2003). In a study of parentification among adolescents whose parents have AIDS, Stein et al. (1999) found that adult role-taking was significantly and positively correlated with emotional distress on the part of the child. In a study of role-reversal in divorced families, Johnston (1990) found that parentification predicted emotional and somatic problems in children. Problems with school performance and absence from school were more frequent among children with caregiving responsibilities for an ill parent (Cree, 2003; Thomas et al., 2003). However, development of life skills may be a benefit

of having an ill parent (Banks et al., 2001; Thomas et al., 2003). Earley & Cushway (2002) conclude that, in spite of a vast body of both quantitative and qualitative research on the impact of family caregiving on adults, scant attention has been given to the psychological impact upon children in caregiving roles and the circumstances under which this impact is greater or lesser. In addition, they note that few studies address the positive benefits of increased autonomy on the part of children with ill parents.

Summary and Purpose of Present Study

The purpose of this study was to investigate autonomy (as measured by Sigafoos et al.'s 1988 Self- and Family Care, and Management subscales) among early and middle adolescents affected by maternal HIV/AIDS. The study was conducted among a sample of early and middle adolescents whose mothers are HIV-positive. The majority of the families (mothers and children) have been enrolled in the study for almost nine years, and the youth have been followed since they were children. Therefore, in addition to investigating factors associated with their current autonomy in early and middle adolescence, we investigated longitudinally these children's early responses to their mother's illness (when they were age 6 to 11 years of age)--primarily instrumental caretaking responsibilities--and their autonomy now as early/middle adolescents. Thus, the major variables included in this study include mother's health status (i.e., viral load, CD4, health functioning, physical symptoms); maternal drug use, since this could severely affect parenting and parent-child closeness; parent-child attachment, which as postulated earlier in this section will remain high during healthy adolescent autonomy development; child perceived efficacy for coping, as one of the key child characteristics associated with good autonomy development; child sexual behavior and substance use, which have been associated with poor autonomy development; and the main predictor of young child responsibility taking. Specifically, the following research questions were addressed: (1) what is the extent to which children of mothers living with HIV assume responsibilities for family tasks during the early years (age 6 - 12); (2) does a relationship exist between changes in maternal health over time and assuming responsibilities for family tasks; (3) does a higher level of responsibility-taking during younger ages predict more or less autonomy during the early and mid-adolescent years (ages 13 - 18); (4) what patterns of change in responsibility-taking over time are predictive of adolescent autonomy; and (5) which factors (e.g., ethnicity) affect the relationships between early responsibility-taking and healthy autonomy in adolescence.

Method

Participants

One hundred thirty-five mothers living with HIV/AIDS were recruited from 14 sites in Los Angeles County (11 clinical primary care sites and 3 AIDS service organizations) from November 1997 to June 1999 into the Parents and children Coping Together (PACT I) study. PACT I was designed to longitudinally assess mothers living with HIV and their young, well children 6 to 11 years old. Follow-ups were conducted every six months; there were five follow-ups. A subsequent longitudinal study, Parents and Adolescents Coping Together (PACT II), followed up with the majority of these families when the children were transitioning to early and middle adolescence.

Inclusion criteria for PACT I were: mother had AIDS or was HIV symptomatic; she had a well child age 6 - 11; and she was English or Spanish speaking. HIV symptomatic was defined using the Centers for Disease Control (CDC) Guidelines for CD4+ T Lymphocyte Category 2 and Clinical Category B, which includes a CD4 count between 200 - 400 and the occurrence of a specified opportunistic disease or the occurrence of diseases for which treatment was complicated by HIV. Medical chart abstraction was conducted to verify eligibility. For mothers who had more than one eligible child, the child with the most recent birthday was selected.

PACT II utilized the same procedures as PACT I, including follow-up interviews every six months. Additional families were recruited from June 2003 through October 2004 using the same procedures and eligibility criteria outlined above (with children age 11 - 14 ½ years). The PACT II second follow-up was selected for analyses because it was the most recent complete follow-up accompanied by the collection of medical chart abstraction data on the mothers (see below) at the time of analysis. The number of mother-child pairs with complete data in the PACT II second follow-up is 108 (of 109). Data from the 108 mother-child pairs in PACT II second follow-up are used in all analyses other than the longitudinal analyses and as the time-point for measurement of outcomes. Of the 135 mothers who were recruited for PACT I, 81 had data available at the second PACT II follow-up. Data from these 81 mother-child pairs are used in the longitudinal analyses in this study.

Procedures

Clinic staff at recruitment sites reviewed patient files, identified eligible families, and obtained verbal consent for UCLA interviewers to contact potential participants. In addition, flyers and brochures for the project were distributed, and patients/clients could contact study staff directly. After receiving a complete description of the study, mothers who agreed to participate signed the IRB-approved informed consent forms and adolescents signed the assent form. Trained bilingual interviewers conducted face-to-face interviews, with interviews of mothers and adolescents conducted separately. Mothers received $35 for their participation and adolescents received $25.

Predictor Variables: Mother Assessment

Viral load and CD4 cell count—Mothers' health status was assessed using viral load and CD4 cell counts from medical record abstraction. Viral load scores above 50,000 were set equal to 50,000 for descriptive purposes, and a dichotomized variable was created for the analysis to differentiate mothers at or above the approximate median viral load (500 copies/ml) from those below the median in this sample. CD4 cell counts were dichotomized into equal to or above 500 versus less than 500 cells/ml.

Health Functioning—The Medical Outcomes Study Short Form 36 (MOS-36: Ware & Sherbourne, 1992) includes subscales that measure physical functioning, bodily pain, energy and fatigue, emotional role, and general health perceptions. The 10-item physical functioning subscale, 3-item role emotional scale**, and 2-item bodily pain scale** were chosen for analyses in this study because they **were most strongly related to autonomy and were** based on a mother's report of her activity limitations; activity limitations are more easily observable to the child and more likely to affect the mother-child relationship (Murphy, Greenwell, Mouttapa, Brecht, & Schuster, 2006). The physical functioning subscale measures the extent to which one's current health limits typical daily activities such as walking, climbing stairs, carrying groceries, bending, kneeling, and stooping. Higher scores indicate better functioning. A coefficient alpha of .95 for the physical functioning scale was found at the second PACT II follow-up and for the longitudinal sample. Emotional role measures problems with work or other daily activities as a result of emotional problems. The emotional role subscale produced an alpha of .84 for the second PACT II follow-up and a .82 for the longitudinal sample. Lower scores indicate better functioning. The bodily pain subscale measures the degree of pain experienced and how much that pain affects normal work. The alpha for this subscale was .85 at the PACT II second follow-up and .89 in the longitudinal data set.

Physical symptoms—HIV/AIDS-related symptoms in the past three months (e.g., unexpected weight loss, skin sores or rashes, shortness of breath) were assessed.

Drug Use—Based on the distribution of responses in the sample to a series of questions on the use of illegal drugs ever or currently, the dichotomous variable "ever used illegal drugs or not" was coded based on whether the mother indicated that she had ever used marijuana, crack, cocaine, methamphetamines, amphetamines, hallucinogens, or heroin, or had shot up or skin-popped illegal drugs not prescribed by a physician.

Early Responsibility-taking due to Maternal HIV—The measure of early responsibility-taking assesses the extent to which a child (6-11 years) has taken on more responsibilities within the household specifically due to the mother's HIV: "In which of the following areas has [Child's name] taken on more responsibilities due to your health status?" It consists of 18 items with four response categories: "no more responsibility," "only a little more responsibility," "a lot more responsibility," and "totally child's responsibility." Items include daily household routines (e.g., cleaning his/her own room, **cleaning of household areas other than her/his own room,** taking out trash, meal preparation, laundry, and taking care of siblings) and questions specific to maternal illness such as reminding mother to take medication and protecting her from interruptions when she was resting. It should be noted that the items focus on instrumental, rather than emotional, caregiving responsibilities. It should also be noted that each of these items was assessed only if the increased responsibility taking was a response to maternal HIV, not just that the responsibility had increased generally due to developmental progression of the children. This measure was used in the trajectory group analysis described below in order to construct predictors of later autonomy. The Cronbach's alphas for this scale for the time points in the longitudinal sample ranged from .89 to .95.

Predictor Variables: Child Assessment

Parent-peer attachment—The Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987) was used to assess attachment. Both the mother and friends scales yield 3 subscales (trust, communication, and alienation), as well as a global score. The global scores for attachment to mother and attachment to peers were used in the analyses. Examples of items are: "I feel my mother does a good job as my mother"; "I wish I had a different mother"; "I feel alone or apart when I'm with my friends." For the PACT sample, Cronbach's alphas were, for attachment to the mother, .89 in the follow-up and .92 in the longitudinal sample; and, for attachment to peers, .90 at the PACT II follow-up, and .91 for the longitudinal sample.

Perceived Efficacy of Coping—A subscale of the Children's Coping Strategies Checklist (Sandler, Tein, & West, 1994) consists of a Child General Coping Efficacy subscale. Four items were administered to assess the child's perceived efficacy of coping strategies used: the degree to which coping strategies employed during the past month were effective in making them feel better; the degree to which they were satisfied with the strategies they employed; how well they felt they handled their problems compared to other kids; and how well they thought they would cope in the future. Alphas were .67 for the PACT II follow-up, and .71 for the PACT I longitudinal sample. The four-item scale has been shown to be associated with resiliency among children affected by maternal HIV/AIDS, with higher perceived efficacy associated with children classified as resilient (Murphy & Marelich, **in press**).

Pre-sexual and Sexual Behavior—Progression of sexual behavior was assessed with items from the Healthy Passages study (Windle et al., 2004; e.g., "Have you ever kissed a boy or girl on the mouth?"; "Has a boy or girl ever put his or her hands under your clothes?"; and "Have you ever put your hands under a boy's or girl's clothes?"). The only significant trends ($p < .10$) were kissing and whether adolescents ever had held hands with a boy- or girlfriend so the last item was retained and the other pre-sexual and sexual risk behaviors were not used in the analysis.

Substance Use—Subjects were assessed for tobacco use on age at first use and frequency of use; alcohol use was assessed asking age of first drinking, age when they began drinking regularly, frequency and intensity of use, binge drinking, and behavioral and psychological consequences (e.g., preoccupied with obtaining or using, interfering with regular activities, responsibilities, memory; Murphy, Durako, Muenz, & Wilson, 2000; Murphy, Wilson, Durako, Muenz, & Belzer, 2001). Drug use was analyzed as three binary variables, ever used alcohol, tobacco, or marijuana or not, due to low frequencies of substance use in the study population.

Outcome Variables

Early/Middle Adolescent Autonomy—At the PACT II follow-up, autonomy was measured by the Autonomous Functioning Checklist (AFC: Sigafoos et al., 1988), a parent-completed checklist designed to measure behavioral autonomous functioning in adolescents in four conceptually distinct subscales: Self and Family Care; Management; Recreational Activity; and Social and Vocational Activity. The scale describes activities (e.g., cares for his/her own clothing; uses telephone and telephone directories) to which parents respond by selecting one of five alternatives ranging from “does not do” to “does every time there is an opportunity.” All subscales have been found to have high levels of internal consistency with coefficient alpha of .76 - .86, and interrater reliability coefficients have been found to be high and statistically significant for $p < .01$ (Sigafoos et al., 1988). The Management autonomy subscale contains twenty items that measure the extent to which the adolescent independently handles his or her interaction with the environment (e.g., “My teenager maintain adequate personal care and grooming, for example bathes, trims fingernails and toenails when needed”; “ . . . selects clothing that is suited to the weather, for example raincoat if raining, warm clothes in winter”; “ . . . meets academic obligations and commitments, for example, completes homework assignments on time, brings necessary supplies to class”). The Self and Family Care autonomy subscale contains twenty-two items that measure the extent to which basic daily maintenance activities are carried out by the adolescent (e.g., “My teenager travels to and from daily activities, for example rides bikes or walks, takes bus, arranges for transportation, drives car”; “ . . . performs minor repair and maintenance in family living areas, for example, changes light bulbs, hangs pictures”). Cronbach’s alpha was .80 for the PACT II follow-up and .82 for the longitudinal sample for the Self and Family Care Subscale. The Management autonomy subscale alphas were .81 at follow-up and .82 for the longitudinal sample. Three items of the social and vocational activity subscale were included in the survey. The alpha for this subscale was .68 in the PACT II follow-up 2 and longitudinal samples. Because this measure had a low alpha, it was not included in the analyses.

Analysis

There were three phases of analysis. The first was designed to create a potential predictor describing patterns of early responsibility-taking due to the mother’s HIV status; the second, to examine relationships of each potential predictor to the autonomy outcomes; and the third, to combine significant predictors into multivariable models.

In the first phase, as a preparatory step, we created “early responsibility-taking” predictors by identifying distinct trajectories of early responsibility-taking across time, using measures from PACT I. (Therefore, only children who were enrolled in both PACT I and PACT II were included in this analysis.) The purpose of including this predictor was to enable examination of the effects on later autonomy of children having assumed increased household responsibilities at age 6 - 11 because of the mother’s illness status. To do this, we applied a group-based trajectory approach using SAS PROC TRAJ (Jones, Nagin, & Roeder, 2001; SAS Institute, 2004). This is a semiparametric method of identifying a small number of distinctive trajectories (patterns over time), which characterize the larger number of individual patterns

of change over time on a variable of interest (Nagin, 1999). It is particularly appropriate for variables, like responsibility-taking, that are not expected to follow a standard course of development over time (Nagin, 2005), but are expected to follow a few interpretable trajectory patterns. This approach allows the investigator to form groups of participants who have similar types of trajectories.

Trajectory patterns can capture properties of change over time that simple summary measures (e.g., an average of a person's scores at each time point) may not. For instance, people who start out with specific values of a variable may, over time, increase, decrease, or stay stable. Such patterns cannot be inferred from single time points or averages across all time points (i.e., from measures of the level of the variable). Rather, examining earlier patterns of behavior allows conclusions about research questions such as whether behavioral consistency, increase, or decrease has the most impact on the subsequent developmental outcome. Our measure of early responsibility in PACT I represented responses specifically to the mother's illness. Thus, consideration of responsibility-taking trajectories allows us to examine the development of the child's responsiveness to the mother's illness and how it affects later autonomy.

We selected the zero-inflated Poisson (ZIP) distribution for the responsibility-taking variables because they were count variables with excess cases clustered at zero (Lambert, 1992). Following a recommended modeling procedure, we estimated a series of models with varying numbers of trajectory groupings and, after identifying an appropriate number of groups, investigated varying types of patterns (e.g., quadratic and cubic; Nagin, 1999). We focused first on quadratic models, the lowest-order models that allowed for nonlinear data across time. Model fit statistics (the Bayes Information Criterion [BIC] for each model) were -1081.96 for one group, -940.32 for two groups, -894.06 for three groups, -868.72 for four groups, and -882.08 for five groups; the six-group model could not be reliably estimated due to singular convergence. While these fit statistics indicate that the 4-group model was most appropriate (because it has the least-negative BIC), we found that the interpretability of this model was less adequate than that of the 3-group model. Specifically, the formation of a fourth group seemed to rely on idiosyncracies at one or two timepoints, rather than discernable trends over time. We therefore gave priority to a different fit criterion: the recommendation that the researchers "select a model with no more groups than is necessary to communicate the distinct features of the data" (Nagin, 2005, p. 77). We then explored the possibility of using a 3-group cubic model, but the shapes of the trajectories differed only slightly at one or two time points from those produced by the 3-group quadratic model. Thus, the quadratic model appeared to be a reasonable and parsimonious representation of the trajectories. Substantive criteria have been used in trajectory model selection by previous researchers (Bushway, Thornberry, and Krohn, 2003). Table 1 shows the raw parameter estimates of the group-based trajectory analysis.

Results from this analysis also provided for each individual a posterior probability of membership in each group. The procedure classifies people into distinct groups based upon which of the group-specific posterior probabilities is largest for an individual (Nagin, 1999). Based upon this classification, Figure 1 shows the observed and predicted trajectories for our sample that were produced by the 3-group model. Average posterior probabilities of being in group 1 were 0.80 for **the 32** individuals who, because their group 1 posterior probabilities were higher than their group 2 or 3 probabilities, were allocated to group 1 (generally low in responsibility-taking over time); of being in group 2, **0.**84 for **the 24** individuals allocated to group 2 (responsibility decreases over time); and of being in group 3, 0.95 for **the 25** individuals allocated to group 3 (responsibility variably high over time). Because membership in trajectory groups estimated by these models *is* probabilistic, and individuals have nonzero posterior probabilities of being in more than one group, we used these posterior probabilities, rather than the simple group classification, in the analytic models, in order to allow some uncertainty in a

child's proclivity to take on a certain pattern of responsibility (Haviland & Nagin, 2005). Thus, this procedure produced three potential predictors for each individual (the posterior probabilities of membership in each of the three trajectory groups). While the group classification approach has been successful in previous research (e.g., Wiesner, Kim, and Capaldi, 2005), our small sample called for a measure with greater variation.

In the second stage of analysis, using the entire PACT II sample, relationships were estimated for the two autonomy outcomes with each potential predictor (from among measures of mother's well-being or children's characteristics), controlling for child's age. As indicated in the literature review above, autonomy is a developmental stage of adolescence. Therefore, we expected age to be strongly related to autonomy, and to be a potential confounder of any relationship between age and mother's illness—particularly since age also was likely to be related to quite a few of our predictors. These analyses therefore used partial correlation controlling for child's age. Additionally, we examined relationships of the two autonomy outcomes with early responsibility-taking (predictors constructed in phase 1 of the analysis), controlling for age; as noted, only the subset of subjects with the early longitudinal data (from PACT I) could be included in these analyses.

Third, based upon these partial correlations, we used ordinary least-squares regression (OLS) to construct parsimonious multivariable models for the autonomy outcomes. We included as predictors variables that were significant at $p < .05$ in the analyses described above. For pairs of predictors that were highly correlated ($r > 0.55$), we selected for the final model either the one that was significant or, if both were, the one that appeared most justifiable on substantive criteria. **All variables in these models are displayed in Tables 4 and 5**. These models helped identify combinations of predictors that appeared to exert independent effects on the development of autonomy.

In the tables presented we have included relationships with $p < .10$—a liberal value allowing the reader to examine potentially interesting effect sizes in this relatively small sample. However, we discuss in the text only relationships with $p < .05$.

Results

Sample Description

The mean age of the mothers was 40.1 years (*SD* = 5.8; range 29 - 59) at the PACT II second follow-up. The racial/ethnic composition of the sample of mothers was: 62.0% Latina, 26.9% non-Latina African American, 5.6% non-Latina Caucasian, and 5.6% other non-Latina ethnic groups; 52.8% of baseline interviews with mothers were completed in Spanish. Marital status was: 31.5% never married; 19.4% married; 20.4% widowed; 16.7% separated; 12.0% divorced. About half of the sample (48.2%) had not completed high school; about one-quarter (27.8%) had completed high school; and the rest had completed some college or technical school or had received an undergraduate degree. The majority (70.4%) of the women were unemployed and the average monthly income was $1,034, with a median income of $790 (based on all earners in the household). Almost all of the women (98.2%) reported living in their own house or apartment; the rest were living with parents, other relatives, or friends. Regarding the adolescents in the study, the mean age was 14.4 (*SD* = 1.8; range = 11-18); 8.3% completed 5th grade, 58.4% completed 6th - 8th grade, and 33.3% completed 9th - 12th grade; 49.1% were male. The percentage of adolescents repeating a grade was 14.1; 56.3% reported they liked going to school at lot; 31.1% said school was "o.k." and 12.6% did not like school. A substantial majority (79.3%) attended religious services. Of this 79.3%, 70.1% attend because they "like to" and 29% because they "have to." An additional 29.6% participate in additional religious activities like a youth group or choir. Twenty-eight percent report that their father lives with them; 57.0% report he lives outside the home and 14.8% report that he is deceased.

Half of the adolescents said they feel very close or close to their fathers and 90.7% feel very close or close to their mothers.

Bivariate relationships were estimated for participation in PACT II with the responsibility taking measure at each time point of PACT I, child age at baseline, gender, ethnicity and race, mother's health, depression, and anxiety at different time points of PACT I, mother's age, marital status, living situation, work status, and household income, whether the children's father was alive and measures of the relationship between the father and the child (e.g., whether the father ever was a primary caregiver of the child; mother's and child's views of how close the child was to the father), children's attendance at religious services, children's depression and anxiety, parent's and children's views of family cohesion and conflict, and children's self-image (intellectual and social status, popularity, and happiness and satisfaction). The only significant ($p < .05$) difference was that children in the participant group tended to be slightly more depressed (4 points on the CDI) at the second wave of PACT I; at the first wave, there was a trend in this direction ($p < .10$).

Patterns of Early Responsibility-Taking

As explained in the Analysis section, individuals' patterns of early responsibility taking fell into three general types: generally low, decreasing, and variably high (labeled as groups 1, 2, and 3, respectively in Table 1 and Figure 1). We wished to examine descriptively the extent to which responsibility-taking was based on the severity of the mothers' illness at different time points. To simplify this task for descriptive purposes only, we classified respondents into three distinct groups based on their highest posterior probability of group membership, as described above. Then, using means and frequency distributions, we examined how these group classifications were related to six measures of mothers' health at PACT I—physical functioning, bodily pain, and number of symptoms, both as continuous and dichotomous variables. Continuous measures will reflect linear relationships and may be more sensitive to extreme values, while dichotomous measures will reflect nonlinear relationships and be less influenced by extreme values. Our objective was to identify relationships whether or not they were linear; therefore, we used both types of measures. The results indicated that the high responsibility children (Group 3) had mothers whose health was poorer than mothers of the other two groups of children (for whom health levels were similar). After reviewing these results, we used an option in the group-based trajectory procedure that allows for inclusion of a time-varying covariate (Jones et al., 2001) in the analysis. We specified the measures of mothers' health as time-varying (i.e., measured at each of the six waves of PACT I) to reflect any changes in their health status over time. We included each of the six time-varying measures of health in a separate trajectory model. The procedure produces an estimated effect of each measure for each trajectory group. Each of these estimated effects indicates whether mother's health was related to an increase in responsibility taking over time (Jones et al., 2001) and what the direction of the effect was. To obtain further details about the effect (e.g., at what time point it was greatest), separate trajectory plots would have been be required for specific patterns of the covariate over time (e.g., mother never had good health; mother's health worsened at time 3 and did not improve after that). Because these analyses would be quite detailed and are not the focus of the paper, we do not present such plots. Instead, we briefly discuss the overall findings in order to add to our descriptive understanding of the trajectories.

For four of the six measures (continuous and dichotomous physical functioning, continuous number of symptoms, and dichotomous bodily pain), the high responsibility group (group 3) significantly increased their responsibility taking when the mother's health worsened. Despite their general pattern of behavior, the low responsibility group (Group 1) nonetheless significantly *increased* their responsibility taking when two measures, continuous number of symptoms and dichotomous bodily pain, indicated worsening mothers' health, but also when

two other measures, continuous bodily pain and dichotomous physical functioning, indicated improving health. Also, despite their general pattern, the decreasing group (Group 2) significantly *increased* their responsibility taking when mothers' health worsened according to two of the six measures, continuous physical functioning and dichotomous bodily pain. Thus, the groups appear to vary in how consistently responsive to mothers' worsening health they were, with the high responsibility group being responsive on the greatest number of measures. The fact that different measures of mother's health appeared related to responsibility-taking in different groups suggests that this relationship is sensitive to specification. We also included child's age at baseline as a time-constant covariate in the trajectory model and found that it had no significant relationship with trajectory group membership. Additionally, separate descriptive analyses (e.g., crosstabulations) including an array of children's characteristics (e.g., sociodemographics) suggested that few of these were related to the posterior probabilities of membership in the trajectory groups; however, African American children were less likely than other children to be in the low trajectory group. Child's gender was unrelated to autonomy, responsibility-taking trajectory group, or the predictors of autonomy, except that the mothers of female children were more likely than the mothers of male children to report a greater number of physical symptoms or to have higher depression scores.

Relationship of Autonomy to Selected Predictors Controlling for Age

We now turn to the analyses of the mothers' reports of their children's autonomy in PACT II. Table 2 shows partial correlations ($r_{xy.a}$, where x=predictor, s=self- and family care autonomy, m=management autonomy, and a=child's age) among the analysis variables for the full cross-sectional PACT II follow-up 2 sample. And Table 3 shows partial correlations of posterior trajectory group probabilities with analysis variables. As explained above, these partial correlations control for the child's age, which was significantly correlated with both types of autonomy and is necessary in developmental models,

Self- and family care autonomy—Controlling for children's age, none of the demographics or mothers' variables was significantly correlated with children's self- and family care autonomy, as reported by mothers. There were, however, significant correlations between this type of autonomy and four of the children's variables. First, children who had greater attachment to their mothers also were seen by them as having higher autonomy than were others ($r_{xs.a}$ = .26). Second, children who used alcohol or drugs alone were less likely than others to be reported as highly autonomous ($r_{xs.a}$ = -.21). Third, higher posterior probabilities of having been in the low responsibility-taking group (labeled group 1 in Figure 1) significantly predicted lower autonomy (.$r_{xs.a}$ = -.30). Conversely, children who were (according to posterior probabilities) more likely to be in the higher responsibility-taking group had higher reported autonomy than did others (.$r_{xs.a}$= .23).

Management autonomy—Two characteristics of mothers predicted their reports of their children's management autonomy. Latina mothers whose interviews were in Spanish had children who, compared with other children, were less likely to have been seen as having high autonomy ($r_{xm.a}$= -.24). Mother's ethnicity was not a significant predictor of autonomy, although African American children were significantly more likely than all others to be reported as highly autonomous (not shown). Also, the children of mothers who ever had used an illicit drug were seen as being more autonomous than were others ($r_{xm.a}$ = .25).

Several children's characteristics also predicted management autonomy. Children reporting higher attachment either to their mother or to their peers had higher autonomy reported by mothers than did others ($r_{xm.a}$=. 27 and .24, respectively). Children with higher levels of coping efficacy had higher reported autonomy than did those with less coping efficacy ($r_{xm.a}$= .27).

Also, children who were more likely to be in the low responsibility group were seen as less autonomous than others (.$r_{xm.a}$= -.36).

Multivariable Analyses Using Longitudinal Sample

We included predictors in a multivariable model of each of the two types of autonomy based upon the partial correlations presented in Tables 2 and 3. Because of potential multicollinearity, we omitted "Mother used illicit drugs" (correlated -0.74 with "Latina Spanish-speaking mother") from the model predicting management autonomy, and omitted the posterior probability of being in the high responsibility trajectory group (correlated -0.57 with the posterior probability of being in the low responsibility group) from the model predicting self- and family care autonomy. "Latina Spanish-speaking mother" was chosen because, when in the model without "mother used illicit drugs," it was significant, whereas the reverse was not true. When they were in the model together, the standard error of "Latina Spanish-speaking mother" was inflated and it was not significant (p = .0947). The low trajectory group probability was included rather than the high group probability because the former was most distinct from the other two. Other results were not sensitive to whether one or both of these variables was included. Substantively, including only one of these variables is similar to including only one of any set of correlated trajectories of behavior. For instance, individuals who pursue higher education during young adulthood also typically are not spending as much time as other individuals might be on employment or child-rearing, and doing any of these activities at a particular time has strong implications for what an individual will be doing in 6 months or a year. Thus, the variable "level of education" also implies something about *not* having done the other activities at certain ages. Because the posterior probability of being in the low trajectory group was a significant predictor of both types of autonomy and thus was included in the multivariable models, these models could include only subjects from the longitudinal sample. The results are presented in Tables 3 and 4.

Self and Family Care autonomy—The analysis of self- and family care autonomy is presented in Table 4. In this model (R^2 = .24), children's age and attachment to the mother predicted having greater reported autonomy. Children who were more likely to be in the low responsibility-taking trajectory group had lower reported autonomy than children who were less likely to be in this group. Having used alcohol or drugs alone did not significantly predict autonomy.

Management autonomy—The analysis of management autonomy is presented in Table 5. In the model shown, child's age and attachment to peers predicted greater reported autonomy. Having a Latina Spanish-speaking mother and the posterior probability of being in the low trajectory group predicted lower reported autonomy

Discussion

In this study of early and middle adolescents affected by maternal HIV/AIDS, level of autonomy development was investigated, as well as early responsibility taking due to maternal HIV and its relationship with later autonomy level during early and middle adolescence. Given the small sample size that had to be used for the multivariable analyses (since children had to be enrolled in PACT I and PACT II for their data to be used in the model analyses), the significant univariate results as well as the multivariable results will be briefly discussed in this section.

In the initial analyses of self-and family care autonomy—behaviors focused on household-centered activities—children with greater attachment to their mothers had higher autonomy, and this finding was maintained in the multivariable analysis model. This finding fits with the

theory that healthy autonomous development is promoted in cohesive parent-adolescent relationships (Campbell et al., 1984; Hill & Holmbeck, 1986; Steinberg, 1990). Early and middle adolescents using substances were less likely to be autonomous in initial data analyses. Autonomy research has shown that an indicator of unhealthy development is adolescent involvement in substance use (Dishion et al., 2004). It may be that early and middle adolescents affected by maternal HIV/AIDS who do not have self-efficacy to regulate their own actions turn to substance use to alleviate feelings of helplessness, or it may be that these young adolescents do not perform autonomous behaviors because of their substance use.

In terms of management autonomy, which is focused more on behaviors that are outside the household and that are more self-oriented, children with stronger attachment to their mothers and/or their peers and those with higher coping self-efficacy had higher levels of autonomy than other children. In the multivariable analysis, only attachment to peers predicted having greater autonomy. In addition, analyses indicated children of Latina mothers who requested their interview be done in Spanish had lower autonomy levels than other children. This finding is somewhat consistent with previous research: McNeely investigated sociocultural contexts of time to first sex among Hispanic adolescents and found that family acculturation, as measured by generational nativity status, did not independently contribute to Hispanic teen's risk of sex but operated through the language of the interview.

Cultural differences may play a role in the development of management autonomy among adolescents. Steinberg, Lamborn, Dornbusch, and Darling (1992) have noted that Latino parenting styles are more authoritarian than authoritative or permissive, with Latino parents encouraging obedience more than autonomy. Traditional Hispanic cultural values that could influence adolescent autonomy include *familismo* (family unity), *respeto* (respect) and *simpatia* (smooth social relationships) (Escobar, 1997; Flores, 2000). La Roche (2002) concluded that the notion of respect [*respeto*] involves similar values, with youth generally taught to obey and respect their families. Such respect has been found to be a protective factor for Latino adolescents (Steinberg et al.). *Familismo and simpatia* both stress the importance of family life and interdependent relations between the individual and the family (Alvarez et al., 1981). Latino adolescents' experience of growing up in the U.S. has been described as *entremundos*--between two worlds (Zavala-Martinez, 1994). That is, there may be an uneasy coexistence between two cultures, two languages, two sets of values, and two philosophies of development and life. In a series of focus groups with African-American and Latino parents and teens, Bean and Rolleri (2005) found that cultural issues may make it difficult for Latino parents to be willing to negotiate around autonomy granting. For example, the importance of parents chaperoning their teen children was a common Latino cultural norm, but in conflict with child acculturation to mainstream American norms. However, in a study of American adolescents from immigrant and native-born families (including Mexican backgrounds), Fuligni (1998) found that despite holding different beliefs about parental authority and individual autonomy, adolescents from all generations and cultural backgrounds reported similar levels of conflict and cohesion with their parents, and evidenced similar developmental trends in their ideas about authority and autonomy. For example, although Mexican adolescents believe it is inappropriate to argue with their parents, they still expect to receive behavioral autonomy at a fairly early age. As Fuligni noted, these findings suggest that within a single society, cultural variations in beliefs about autonomy may play only a modest role in parent-adolescent relationships. Moreover, the findings suggest that descriptions of ethnic groups that rely on traditional aspects of their cultures may only apply to families whose members originated in their home countries, but later generations born and raised in a different country may be more likely to hold beliefs and values consistent with norms of the current country (Portes & Rumbaut, 1996). These findings were similar to those of Phinney, Kim-Jo, Osorio, & Vilhjalmsdottir (2005), who reported that among adolescents from four ethnic groups (including Mexican) the expression of autonomy, contrary to expectations, showed no overall

ethnic differences. Results showed a strong tendency to express autonomy even among adolescents who strongly endorsed values of family interdependence.

In contrast to the studies noted above that highlight the effects of immigration and acculturation, in this study the main contrast was between African-American and Latino children. African American children were less likely than other children to be in the low trajectory group. African-American culture specifically values and socializes for autonomy (Boyd-Franklin, 1989; Kane, 2000). Development of self-reliance, independence, and a sense of responsibility have been described as typical developmental tasks, particularly for females (Jordan, 1991). Strong and flexible coping skills enhance the ability to survive hardship, and Barbarin (1983) attributes this ability to a combination of factors, such as recognition of potential discrimination, religious faith, and extended family structure (Barbarin, 1983). Thus, the current study's finding is consistent with this literature on parenting among African-Americans.

Children with stronger attachment to their mothers and/or their peers and those with higher coping self-efficacy had higher levels of management autonomy than other children. Previous research literature indicates that attachment to both parents and peers is positively related to psychological well-being (Armsden & Greenberg, 1987). During adolescence the development of autonomy is tied to expanding social relationships with peers and de-individuation from parents. While contact and attachment to peers involved in problem behavior can be detrimental to autonomy, this is mitigated by parental contact with the child by influences such parent-child attachment (e.g., Dishion et al., 2004). Therefore, a positive relationship with their mother can provide a supportive base from which these early and middle adolescents can branch out and establish autonomous relationships with peers. The combination of independence and a positive social environment appears to be the most appropriate condition for positive developmental outcomes (Noom et al., 1999). As noted earlier, management autonomy is related to social involvement outside the family (attachment to peers), but not to the exclusion of attachment to the mother; the latter is significant in the model controlling for age but not in the multivariable model. As is also indicated by previous literature, this suggests that management autonomy is accompanied by development of a wide range of social skills. This may reflect the early/middle adolescents' skill in balancing their relationships with their mothers and their relationships with their peers. It also supports previous studies that show that children who are more supported by their mothers are more successful in developing autonomy (Bronstein et al., 2005; Joussemet et al., 2005). The fact that univariate analyses in this study show that those early/middle adolescents with higher coping self-efficacy had higher levels of management autonomy than other children is consistent with research among general adolescent population samples showing that autonomy is connected to social competence, academic competence, and self-esteem (Noom et al., 1999).

Finally, the univariate findings of an association of autonomy with "positive" characteristics such as mother-child bond and coping self-efficacy provides a context for interpreting the trajectory group findings. The trajectory group findings suggest that higher responsibility taking in instrumental caregiving tasks is compatible with autonomy development. These findings were only apparent when considering the pattern of responsibility taking over time. This suggests that "parentification" of young children with a mother with HIV/AIDS—that is, the young children taking on household responsibilities due to the mother's illness—may not negatively affect later autonomy development in these children. While it may indeed have other detrimental effects, such as more absence from school and school performance (Cree, 2003; Thomas et al., 2003), in at least this limited sample of children affected by HIV, higher responsibility taking as a result of maternal HIV/AIDS among young children was associated with later early/middle adolescent higher autonomy functioning. That is, at early and middle adolescence, these children had good self-care and good family-care autonomy skills. Thus,

even if they experienced some distress from parentification at an earlier age, it did not interfere with their long-term early and middle adolescent autonomous functioning.

There is one strong clinical implication from this paper. If HIV-positive mothers, due to their fatigue or illness, must rely on their young children at times to perform behaviors that most children their age do not typically perform, then it is critical that there be a strong focus on the mother developing or maintaining: (1) a high level of attachment and bond between herself and the child; and (2) strong support of the child to assist in the child developing strong coping self-efficacy. Family therapists must work within the limitations of families, and if a child does indeed have to sometimes function in a "parentified" role, then the data from this study indicate that children with a close attachment to their mother and who have good coping self-efficacy will have higher autonomy as they develop; these are both issues that can be worked on and improved in family therapy.

There are a number of limitations to this study. There are a very limited number of validated measures of adolescent autonomy. The Sigafoos et al. (1988) measure: is well-grounded in theory; has shown high levels of internal consistency and consistent and significant correlations between each subscale and adolescent leadership experience, providing evidence for construct validity; and has been used in a number of research studies over the years (e.g., Feinberg & Hetherington, 2000; Keller et al., 2001; Simeon, Nixon, Milin, Jovanovic, & Walker, 2005; Wehmeyer, Kelchner, & Richards, 1996). However, it is based on parental report. This study did not have available observations of parent-child interactions to rate autonomy, or adolescent report. Future studies may want to include measures from different informants to gain a broader perspective of autonomy. A second limitation is the relatively small sample size for this study, providing lower than optimal power for the multivariate analyses. In those models, the mother variables were not significant predictors of autonomy, but the models stretched the limits of our sample size. Thus, due to low power, these results should be explored further in future research with larger samples. Finally, the measure used to assess early responsibility-taking among the young children was primarily focused on instrumental caregiving tasks. Findings may differ for emotional caregiving (Jurkovic et al., 1991), and this should be investigated in future studies. In addition, future studies could obtain information from the adolescent and possibly other informants on autonomy, and may also benefit from having a comparison sample of children whose mothers do not have significant medical illness. This would allow investigation of secure attachment and it's relationship to maternal illness.

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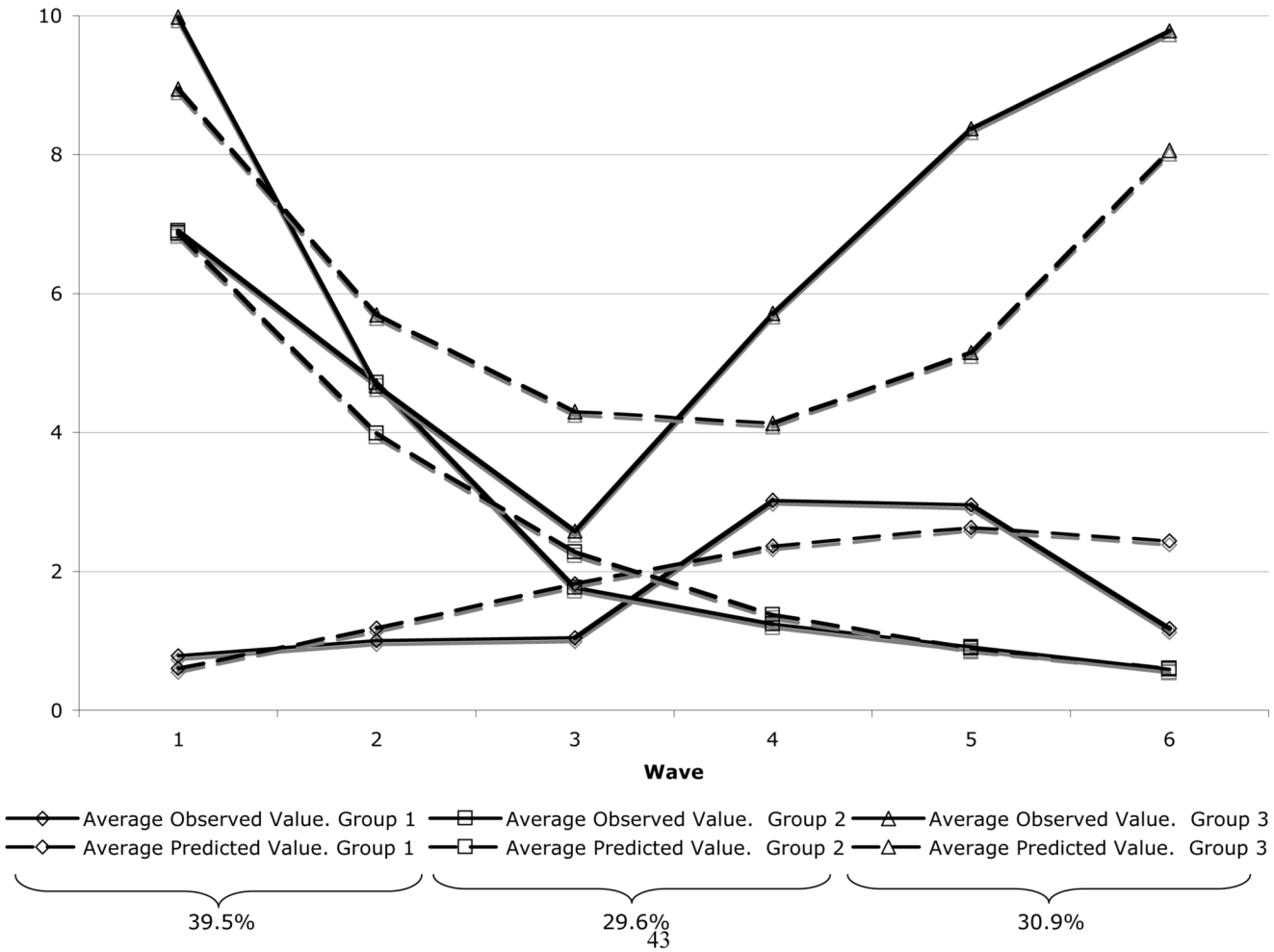

Figure 1.
Level of Early Responsibility-Taking Over Time: Average Observed and Predicted Values for Three Identified Pattern Groups

Table 1

3-group quadratic zip model for sum of responsibilities taken[a]

Group	Parameter	Estimate	*SE*	T for H0 Parameter = 0	Prob > [T]
1	Intercept	-1.24521	0.61435	-2.027	0.04
	Linear	1.50069	0.31355	4.786	0.00
	Quadratic	-0.16724	0.03895	-4.294	0.00
2	Intercept	2.62399	0.26545	9.885	0.00
	Linear	-0.05237	0.22586	-0.232	0.82
	Quadratic	-0.05473	0.03614	-1.514	0.13
3	Intercept	2.98105	0.12624	23.615	0.00
	Linear	-0.239	0.09469	-2.524	0.01
	Quadratic	0.03851	0.01339	2.877	0.004
	Alpha0	-1.11005	0.49083	-2.262	0.02
	Alpha1	1.02182	0.31706	3.223	0.001
	Alpha2	-0.13152	0.0442	-2.975	0.003

[a]BIC (n = 81) -894.06122.

Table 2

Partial correlations among analysis variables in PACT II, controlling for child's age (partial correlation, p-value, n)

	Self- and family care autonomy	Management autonomy	Mother interviewed in Spanish	MOS-36 Physical functioning dichotomized	Ever used any illicit drug	Attachment to mother	Attachment to peers	Held hands with boy- or girlfriend	Ever had more than a few sips of alcohol	Drink or use drugs alone	General coping efficacy	Number of symptoms	MOS-36 Role emotional dichotomized
Dependent Variables													
Self- and family care	1	0.51 < .0001 autonomy	.006 .95	-.15 .12 106	.06 .57 107	.26 .009 107	.08 .42 106	.19 .057 103	.16 .10 103	-.21 .03 107	.16 .09 107	.02 .84 105	-.02 .87 107
Management autonomy		1	-.24 .01 107	-.17 .08 107	.25 .009 106	.27 .0056 103	.24 .016 103	.07 .47 107	-.07 .4949 107	-.15 .13 105	.27 .005 107	.17 .08 106	.17 .08 107
Independent Variables													
Mother interviewed in Spanish			1	.27 .004 108	-.74 < . 0001 107	-.12 0.22 104	-.07 .50 104	.14 .16 108	.05 .59 108	-.07 .46 106	-.15 .12 108	-.14 .14 107	-.03 .76 108
MOS-36 Physical functioning dichotomized				1	-.24 .01 107	-.07 .49 104	-.02 .86 104	.11 .24 108	.08 .39 108	.16 .09 106	-.01 .90 108	-.36 .0001 107	.41 <. 0001 108
Ever used any illicit drug					1	.16 .10 103	.25 .01 103	-.12 .21 107	.04 .68 107	.02 .84 105	.21 .03 107	.09 .38 106	.03 .76 107
Attachment to mother						1	.47 < .0001 103	-.13 .20 106	-.08 .43 106	.10 .31 104	.55 <. 0001 106	.13 .21 103	.19 .05 104
Attachment to peers							1	-.10 .30 106	-.01 .91 106	.03 .75 104	.53 < .0001 106	.13 .18 103	.14 .15 104
Held hands with boy- or girlfriend								1	.27 .007 110	-.07 .46 108	-.10 .29 110	.02 .86 107	-.04 .70 108
Ever had more than a few sips of alcohol									1	-.18 .06 108	-.04 .68 110	-.03 .75 107	-.07 .49 108
Drink or use drugs alone										1	.09 .37 108	.01 .89 105	.02 .80 106
General coping efficacy											1	.16 .11 107	.12 .23 108
Number of symptoms												1	-.40 < .0001 107
MOS-36 Role emotional dichotomized													1

Table 3

Partial correlations of posterior trajectory group probabilities with analysis variables in PACT II, controlling for child's age (partial correlation, p-value, n)

Posterior probabilities	Self- and family care autonomy	Management autonomy	Mother interviewed in Spanish	MOS-36 Physical functioning dichotomized	Ever used any illicit drug	Attachment to mother	Attachment to peers	Held hands with boy- or girlfriend	Ever had more than a few sips of alcohol	Drink or use drugs alone	General coping efficacy	Low responsibility trajectory	Declining responsbility trajectory	High responsibility trajectory
Low responsibility trajectory	-.30	-.36	-.04	.12	-.01	-.11	-.05	-.16	-.01	.26	-107	1		
	.01	.0019	.74	.31	.94	.36	.68	.17	.91	.03	.53			
	74	74	75	75	75	72	72	76	76	75	76			
Declining responsibility trajectory	.07	.17	.01	-.05	.03	.08	.10	.11	-.08	-.21	.09	-.47	1	
	.57	.16	.94	.70	.80	.51	.41	.34	.51	.07	.44	< .0001		
	74	74	75	75	75	72	72	76	76	75	76	76		
High responsibility trajectory	.23	.21	.03	-.08	-.02	.04	-.04	.05	.09	-.06	-.01	-.57	-.47	1
	.05	.08	.78	.51	.87	.76	.72	.64	.47	.59	.92	< .0001	< .0001	
	74	74	75	75	75	72	72	76	71	75	76	76	76	

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Table 4

Multivariable Analysis of Self- and Family Care Autonomy[a,b]

Variable	Estimate	*SE*	*p*
Demographics			
Child's age	2.14	0.69	.003
Children's variables			
Attachment to mother	0.20	0.08	.019
Drink or use drugs alone	-5.58	3.28	.093
Low responsibility trajectory[c]	-7.06	3.21	.032

[a] Model contains all variables shown.

[b] Analysis conducted on subsample with PACT I data; $n = 69$, adjusted $R^2 = 0.24$, model $p < .001$.

[c] Posterior probability of trajectory group membership.

Table 5

Multivariable Analysis of Management Autonomy[a,b,c]

Variable	Estimate	*SE*	*p*
Demographics			
Child's age	3.70	0.61	< .001
Mother interviewed in Spanish	-5.38	2.24	.019
Children's variables			
Attachment to mother	*ns*		
Attachment to peers	0.20	0.08	.016
General coping efficacy	*ns*		
Low responsibility trajectory[d]	-10.45	2.62	< .001

[a] Model contains all variables shown.

[b] Analysis conducted on subsample with PACT I data; $n = 67$, adjusted $R^2 = 0.48$, model $p < .001$.

[c] Estimates with $p \geq .10$ are denoted by *ns*.

[d] Posterior probability of trajectory group membership.