Well-Being in the Transition to Adulthood: Differences by Disability

Past research on the effects of disability on the transition to adulthood have shown significant impacts on the role accumulations associated with this period of the life course. I extend this research by considering how type of disability and experiences during the transition to adulthood impact the well-being - depression - of young adults. Results show significant impacts of little or no work experience, disability, and receiving government assistance are positively associated with increases in depressive symptomology; post-secondary educational attainment and current employment decrease levels of depression. These effects hold even when controlling for depression in adolescence. Results suggest that disability shapes transition experiences and these differential experiences yield significant mental health effects for young adults with disabilities.

As the world becomes more global, problems and issues facing populations compete for attention. Research suggests that disability is one issue becoming increasingly important on the global radar (Albrecht and Verbrugge, 2003). The growing awareness paid to disability is due not only to attention from international organizations (such as the World Health Organization and the United Nations), but also to global demographic changes such as increases in life expectancy (which raises lifetime chances of experiencing disability or chronic illness), medical interventions (that extend the lives of disabled people), environmental hazards and unhealthy lifestyles (that increase the prevalence of disability), organized advocacy of and on behalf of disabled persons, and expanded social, political, and legal definitions of disability itself. While the total number of persons living with disabilities worldwide is unknown, conservative estimates suggest that at least 10% of the world's population (600 million people) have a disability (WHO, 2006).

Not only is disability a source of disparity on a global scale, but it is also and an agent of stratification within the United States. Though attention is given in both policy and research communities to the experiences of racial and ethnic minorities, women, and increasingly to the elderly, little attention has been paid to the experiences of persons—but particularly children and young people—with disabilities. Excepting a few recent studies (Preistley 2003; Wells, Sandefur and Hogan 2003), researchers have given even less attention to youth and young adults with disabilities. Given the lack of coherence in school-to-work transitions in the U.S. context (Kerckhoff 2003), the transition to adulthood is a particularly important time in the lives of disabled persons and understanding young adult outcomes for these individuals provides a first look at possibly life-long differences between individuals with and without disabilities.

The research presented here shows the demographics of disability among adolescents transitioning to young adulthood in the United States. Specifically, using data from a large, recently collected sample of young adults, the National Longitudinal Study of Adolescent Health, I show how disability is a both a product of other stratifying elements (such as race and gender) and how it stratifies the social and economic outcomes and well-being for these young adults.

The relevance of this research for disability policy is important given that recent reports suggest major changes to disability policy in the last two decades—the Amereicans with Disabilities Act (ADA), Supplemental Security Income (SSI), Social Security Disability Insurance (SSDI)—have questionable outcomes regarding the successfulness of the legislation (Burkhauser and Daly, 2002). With the legislative and institutional changes of the early 1990s that sought to eliminate the detrimental effects of disability, it is expected that youth transitioning to adulthood beyond this time will more closely resemble their non-disabled peers. Knowing the effects of disability will help policy-makers with future planning of educational policy, social programming, and institutional structures. If significant differences in transitional experiences and young adult well-being exist across disability groups, legislators may need to reconsider the legal and social structures that are hindering the full inclusion of individuals with disabilities in society.

What is Disability?

Disability is situated in the borderlands between many areas of the social sciences and subsequently is only marginally considered as part of any larger disciplinary research pursuits. Many of these areas conflate disability with other life course and health-related experiences such as aging and chronic illness. However, sociologists are beginning to reconsider the definition of disability in much the same critical scholars problematize concepts such as race and gender.

There are two general approaches to defining and studying disability—the medical and social models (Longmore and Umansky, 2001). Within the medical model, disability is considered a biological or medical condition requiring care, management, professional consultation, and an effort toward "a cure." In contrast, within the social model, disability is considered the product of social conditions. Physical and social environments may be more or less hospitable, accessible, or discriminatory for people with certain biological characteristics or impairments. Disability scholars liken the distinction between the social and the medical models of disability to the distinction made between gender and sex.

Many social scientists use the social model in studies of disability. Critical scholars take the issue further. Shakespeare and Watson (1998) argue that disabled people should be considered a social group that encompasses all types of impairments. While Groce (1998) notes that the idea of disability encompassing a wide variety of emotional, physical, and mental impairments is relatively recent, Scotch and Schriner (1997) present a single model of disability existing as a continuum that they call the human variation model. In this conceptualization, impairments may or may not be relevant in different settings. The social model of disability argues that it is both conceivable and apparent that persons with similar biological or bodily impairments may be more or less disabled depending on the societies and social circumstance in which they live. It is not a far stretch from here, then, to see disability as a social problem.

In reality, the social and medical models are inevitably linked. Bury (2000) suggests that this is "a major problem for the social model, for it is difficult to reject the evidence that some aspects of disabled people's lives are intimately affected by their illness or impairments…. In reality, the link between impairment and disability is not so easily broken; many significant aspects of disability are constituted by impairments and illness" (p 180). As Albrecht and Verbrugge (2003) reiterate, "our real world programs still operate on medical terms" (p 294). And Baynton (2001) concludes that, definitional issues aside, disability has historically been one of the most prevalent justifications for discrimination and inequality. These issues and debates are important is setting a backdrop for quantitative studies using respondents with disabilities. Great care has been taken here to incorporate the most meaningful measurement of disability (see below).

Disability and the Transition to Adulthood

Shanahan (2000) notes two patterns emerging in life course research and the transition to adulthood in particular. The first pattern is increased standardization in the life course in the past two centuries. Second, the transition to adulthood has recently become more individualized, with a greater variability in the sequencing and overlap of transitional activities and events. Shanahan notes that agency is an important mechanism in transition, with goal-orientation and planful competence in adolescence important predictors of positive adult outcomes.[1] Moreover,

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[1] I suggest that this might be particularly important for individuals with disabilities. Emphasis is placed on negotiating successful transitions for adolescents and is important to the agenda and goal-setting for youth, their parents, schools, employers, and medical providers.

in the US context, the unstructured system of school-to-work transition requires particular individualization.

Investigating the school-to-work transition in a global context, Kerckhoff (2003) compares the educational and school-employer connection differences across the United States, Germany, and Great Britain. While special education may provide alternatives, Kerckhoff (2003) argues that the US system offers little vocational education, focusing instead on general credentials without an organized school-to-work transitional pattern. On the whole, the American system "leaves young people completely on their own to find their way through the transition process" with students facing "a very ill-defined interface between school and the world of work" (p 264). This unstructured American system may be particularly harmful for students with disabilities. Priestley (2003) argues that unstructured transitions "have consigned many [disabled] people…to a nether world of repeated, unresolved transitions in which true adult status is neither envisaged nor attained" (p 113).

Work experience may be particularly important as measures of disability in adulthood often depend on ability to work. Pilcher (1996) notes the important role work plays in the transition to adulthood given the importance of the role of worker in one's self-definition. While Pilcher notes that alternative daytime activities may more accurately mark the transition to adulthood for youth with disabilities, other studies show that employment is given high premium for adult status (Clark and Hirst, 1989). In this longitudinal study of young adults with cerebral palsy, approximately half of the respondents age 25-30 were in paid employment but only one-fourth were living independently. Most of these respondents were satisfied with their employment; however some did express concern with their pay, work conditions, and opportunities for advancement. Of those not in paid employment who attended a day center, two-thirds were unsatisfied with their experiences at the centers. That is, while Mitchell (1999) suggests that the move toward meaningful daytime activity may be an important alternative to paid employment for adolescents with disabilities, Clark and Hirst's respondents were largely unsatisfied with their daytime activity in centers, even those that mixed work with non-work activities.

Wagner (1992) reports on the significant differences between the experiences of women and men with disabilities in the U.S. during secondary school and the first few years after. Using the National Longitudinal Transition Study of Special Education Students (NLTS)[2] Wagner finds that males and females with disabilities experience schooling and the transition to adulthood quite differently. Females were significantly less likely to be employed three to five years after school, 64% percents of males with disabilities were employed while only 40% of females were employed.[3] Similarly, another study finds that fewer females (47%) than males (72%) were competitively employed one year after high school (Doren and Benz, 1998).

Aside from employment differences, males and females with disabilities have very different social and family experiences in young adulthood. Women are less likely to see friends regularly, twice as likely as males to be married or cohabiting, and two and half times more likely to be parents. These social and employment differences may be considered the product of both schooling and larger social differences in disability between males and females. While learning disabilities likely occur as frequently among females, they are less often diagnosed and reported so that females are less likely to be referred to special education programs (Wagner, 1992). In the NLTS data, only 32% of students in special education programs were female, and

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[2] The NLTS is a congressionally mandated survey of special education students. The sample, collected on over 8,000 7th to 12th graders (aged 13-21) in 1985-1986 in special education, includes information on many types of disability, including learning disabilities, deafness, mental retardation, and orthopedic impairments (among other types of disability). Respondents were surveyed again in 1990-1991 when they were 18-26 years old.

[3] Wagner (1992) notes that among males and females who are physically impaired, rates of employment are similar.

these females had lower IQs and mental skills, suggesting that males are more often placed in special education programs, often for less severe impairments.

Wells, Sandefur, and Hogan (2003) undertake an investigation of the post-high school transition to young adulthood for youth with disabilities. Using data from the National Longitudinal Transition Study of Special Education Students (NLTS, described above in footnote 2) and the National Educational Longitudinal Study (NELS)[4], the authors assess the differences in transition to adulthood for adolescents with and without disabilities and variation in the transition among those with different disabilities. Measures of transition to adulthood include high school graduation, employment, residential independence, and marriage and family formation. First the authors conduct a latent class analysis to determine patterns of transition. They label five major latent classes for all those in the sample (i.e. those with and without disabilities): 1) living with folks, working; 2) very dependent; 3) full-time student; 4) family track; 5) mixing family with work. Latent class probabilities differ for men and women, between those with and without disabilities, and depending on severity of disability. Among those in the NLTS sample, the largest latent class for both men and women is the "very dependent" class: single, living at home, not working, very little education. For those in the NELS sample with disabilities (on average having less severe disabilities), differences appear for men and women: women are most likely to be full-time students (the third latent class) and men are most likely to be in the first: single, living at home and working. Finally, in the non-disabled NELS sample both women and men are most likely to be full-time students.

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[4] The NELS study began collecting data in 1988 with continued follow-ups biannually through 1994. Respondents were in eighth grade in 1998 and approximately 20 years old in 1994. While the NELS survey excludes those unable to complete a written questionnaire, it is considered representative of U.S. students. The data describe self-reported disabilities, generally mild to moderate. The NELS data suggests that half of those with disabilities in public schools were excluded from the sample. However, representative categories of disability include learning disabilities, hearing or visual impairments, orthopedic impairments, emotional disturbances, and others.

In considering the latent class probabilities, the authors conclude that “disability and type of disability appear to be the factors that dominate these youths’ transitions to adulthood” (p 819). Multinomial logistic regression analyses of factors associated with latent class membership show that for both males and females with disabilities, outcomes are strongly influenced by type of disability and by family income (among NELS respondents). However, for these individuals, “none of the other demographic or socioeconomic factors considered in the analysis emerge as significant predictors of outcomes—in other words, the effects of disability and type of disability outweigh the effects of race and ethnicity, family structure, and number or siblings” (p 823). The authors conclude that full integration of individuals with disabilities has not yet occurred in American society. They argue that “it is incumbent on sociologists” to examine all aspects of the disabled experience and to fully integrate disability into their research agendas (p 828).

Researchers have noted significant differences between the mental health and well-being of youth with and without disabilities. Using Add Health data, Sventaz et al, (2000) find that while girls having higher levels of emotional distress than boys, both boys and girls with learning disabilities are twice as likely to experience distress than those without. Howard and Tryon (2002) too find that approximately one-third of respondents with learning disabilities in their sample of students in New York public high schools have moderate to severe depressive sympomology. Moreover, youth with disabilities are less likely than others to receive mental health services once diagnosed with mental or behavioral disorders (Witt, Kasper and Riley 2003). Thus, well-being appears to be one area in which adolescents and young adults with disabilities are affected more negatively than their non-disabled peers.

Research Goals

From this research, it is clear that adolescents with disabilities experience the transition to adulthood differently than their nondisabled peers, particularly in reference to work. Individuals with disabilities are less likely to work while in high school and are less likely to be employed in the years following high school. These factors are important markers of adult status. As Priestley (2003) notes, "there is a certain similarity in the way that childhood and disability are revealed in opposition to the supposed normality of (non-disabled) adulthood" (p 85). For these reasons, understanding the additional barriers young adults face in transitioning to full adult status is an important step toward full inclusion for all people in society. On the whole, what little work exists regarding the experiences of U.S. adolescents with disabilities is largely drawn from a single data source (NLTS), now over a decade old. That is, many legislative changes have occurred since these data were collected in the late 1980s and early 1990s that significantly impact the experiences of children in school, in transition, and beyond. These major changes include, the passage (in 1990) and implementation (in 1992) of the Americans with Disabilities Act (ADA) and changes to the Individuals with Disabilities Education Act (IDEA) in 1990, 1997, and 2004.

The goals for the present research are to extend previous work on disability for young adults in the United States to consider the demographic distribution of disability across gender and race and to assess the differences in young adult outcomes across three major disability groups against the non-disabled majority. This research represents an important next step from the work of Wells et al (2003) and Wagner (1992; Wagner and Blackorby, 1996) to consider not only differences in transition experience but also how these differences might affect young adults' well-being. Insights gleaned from sociology, demography, and public health suggest that disability and chronic health conditions will continue to gain in importance at a global level; they are currently surpassing more acute conditions as leading causes of death. Moreover, as special education continues to serve over 12% of the school-age population (see footnote 1) and as demands for access for higher education continue to grow (see Schmidt's recent article [2005] in the Chronicle of Higher Education), we must consider disability in rigorous academic research.

Data, Measures, Method

In order to undertake research of this nature, it is important to have a sample of young adults who are currently making their way into and through early adulthood and the National Longitudinal Study of Adolescent Health (Add Health) affords the advantage of a large, nationally representative sample collected over the critical period during adolescence and also young adulthood. Using questions asked of both children and parents in adolescence and of adolescent respondents themselves at three time points during the transition to adulthood, Add Health provides sufficient demographic information on disability, work experiences, and mental health.

Data used in this project are from the National Longitudinal Study of Adolescent Health (Add Health), a national longitudinal study of adolescents in grades 7-12 during the 1994-1995 school year. Data were collected from a total of 90,118 students surveyed in middle, junior, and high schools. From the original sampling frame of school rosters, a random sample and oversamples of students with certain characteristics interviews. Wave 1 contains a total of 20,745 students who completed in-home interviews. Wave 1 interviews were in-person, conducted in respondents' homes, and augmented with audio computer assisted self-interviews. Approximately 18 months later, a second wave (Wave 2) of follow-up interviews was completed in 1996. This wave followed-up with 16,706 who had not graduated from high school between sample waves. Wave 3 data were collected on 15,197 young adults roughly 18 to 26 years old in 2001-2002. Results characterize a nationally representative sample of US adolescents and young adults in various stages of the transition to adulthood.

The sample here consists of those who are in both waves 1 and 3. Item non-response varies by question and must be recoded to missing. In many cases, hot deck imputation was used to generate values for missing data (see Hawthorne and Elliott 2005; Reilly 1993; and Nordholt 1998 for a full description). Hot decking is used to generate values for missing data on education, race, income, depression, and living at home. After cases with missing weights, the total sample size to 14,258.

The measurement of disability follows published studies that use Add Health data. For physical disabilities, I follow the model of Cheng and Udry (2002). The measure uses questions from parents, respondents, and interviewers to assess both physical impairments and perceived disabled status. Questions ask about activity limitations, limb difficulties, use of assistive technology, and parent- and self-perceived disabled status. Questions of interviewers further assess blindness and deafness. A scale with values 0-5 is derived and then dummy coded so that scores of 3 or higher represent having a physical disability. Thus, with scores of 0, 1, and 2 collapsed into non-disability, this measure is rather conservative.

Mental disability, too, follows a model by Cheng and Udry (2003). The measure uses scores from an Add Health administered Peabody Picture Vocabulary Test (PPVT). Individuals with scores greater than 2 standard deviations below the mean are considered to have a mental disability. Learning disabilities are measured by parent surveys (following Svetaz, Ireland, and Blum, 2000). Parents were asked whether their child had ever been diagnosed with a learning disability and if the child was ever enrolled in special education programs. If parents responded positively to both, children are considered to have a learning disability. In cases of individuals with more than one disability, I classified them into what might be considered their most important given the dependent measures of this study. Thus, physical disability is hypothesized to have the smallest affect on young adult outcomes, followed by learning disability and finally mental disability. Within the sample, 276 are identified as having a physical disability, 715 have a learning disability, and 238 have a mental disability (see table 1 for full descriptive information on all measures).

Data on race and ethnicity also come from wave 1. Respondents were first asked about Hispanic origin (Are you of Hispanic or Latino origin?) and I code these as "Hispanic" regardless of race. Then, a series of race and nationality questions are asked (What is your race? with responses of White, Black or African American, American Indian or Native American, Asian or Pacific Islander, Other). Add Health allows respondents to select multiple race categories. In order to make the most meaningful sense out of race, I "force" respondents into a single racial category. I code those who select only one race into a single response category (for example, non-Hispanic black). Those who select more than one race are in universe for the question "Which one category best describes your racial background?" and I use their responses to this question as a trump for multiple race categorization. Finally, for the few respondents who are still not classified into a single race category, I use interviewer remarks to supplement missing race information. Hotdeck imputation is used to assign a single racial category to a few remaining missing cases. I use gender, age, and education level in the hotdecking equation.

Remaining variables include education (measured ordinally as no degree or GED, high school degree, some college, and college graduation), having little or no work experience by wave 3 (measured as a dummy variable representing having no work experience whatsoever or having never worked more than 9 weeks straight of 10 hours a week or more), income (measured from respondent's income at wave 3), living at home with parents, receiving government assistance (in the forms of food stamps, AFDC, Supplemental Social Security Income, or Section 8 housing assistance), age, gender, and current working status.

I measure depression at wave 3 using a subset of measures from the Center for Epidemiological Studies Depression Scale (CES-D). The nine-item subscale has an alpha coefficient of 0.79. The questions ask about the past seven days. The questions used are:

> "You were bothered by things that usually don't bother you"
> "You could not shake off the blues, even with help from your family and your friends"
> "You felt that you were just as good as other people" (reverse coded)
> "You had trouble keeping your mind on what you were doing"
> "You were depressed"
> "You were too tired to do things, during the past seven days"
> "You enjoyed life" (reverse coded)
> "You were sad"
> "You felt that people disliked you"

Responses range from 0 to 3 for each item. Individuals with summed scores greater than 8 (out of 27) are considered depressed for the purposes of this paper. This score follows the ratio noted in Zich et al, 1990. Again, it is important to note that this is not a clinical diagnosis, but rather an indicator of depressive symptamology. All respondents were asked this set of questions at both wave 1 and wave 3. Responses from wave 1 are used as control measures of prior depression.

I use STATA (version 9) software to generate population estimates and test differences across disability types. Stata software includes estimation techniques that account for the complex method of sampling and stratification used in the Add Health data. Estimation of standard errors is done using Stata's svy commands and will follow suggested Add Health estimation techniques as described in Chantala and Tabor (1999). I have measured disability as a non-changing status (measured at wave 1). This too should reflect the effects of disability on the experiences in the transition to adulthood. Importantly, the respondents in Add Health transitioned to adulthood post-ADA and thus we might expect their transition experiences to differ from the results found for studies using the NLTS data (collect 1985-1991). This has important implications for the effectiveness of the ADA, changes to IDEA, and may illustrate social institutions experiences in which youth with disabilities are falling short of their non-disabled peers.

Results

Table 1 presents demographic and descriptive characteristics of young adults by disability type. Looking first at the gender divisions across disability type, we see that the no disability, mental disability, and physical disability groups have roughly equal proportions males and females. However, for learning disabilities, there are over two times as many males as there are females, making the gender division in this group significantly different than the gender breakdowns in other disability types. Looking next at race, the racial breakdown between those with no disability and with learning disabilities is approximately the same, with about 68-71% white, 15% black, around 10% Hispanic, and 2-5% other races. The largest differences in racial divisions are among those with mental disabilities. Approximately 88% of those with mental disabilities are nonwhite. About half are black and 30% are Hispanic. The racial profile of young adults with mental disabilities differs significantly from all other disability types.

Differences by age across disability types are interesting given the weighted representation of the Add Health respondents. Recall that Add Health is a sample of and weighted to represent students in grades 7-12 in the 1994-1995 academic year. Thus, the significant differences at the high and low of the age distribution suggest that those with disabilities may not have been "on time" with their non-disabled peers.[5]

Thus, given this basic information regarding the demographic distribution of disabilities in the population of young adults, we can see a few instances showing that disability is not randomly distributed. First, two times as many males as females have (or have been diagnosed with) a learning disability. This is important given that this category represents what might be considered the most socially defined type of disability, and it appears parents and schools may be quicker to label boys than girls with learning disabilities. The social implications of this are important, but beyond the scope of this paper. Second, mental disability is much more prominent among nonwhites. While the conceptualization of mental disability used here is consistent with other published studies using the same data (Cheng and Udry 2003), recall that the measurement is a single indicator of falling 2 or more standard deviations below the mean on a standardized test. The measure may be picking up appreciably low-performing non-white youth rather than mentally disabled, suggesting different but equally important implications for policy.

Turning to the young adult outcomes, education varies considerably by disability. Not surprisingly, mentally and learning disabled youth are significantly less likely than those with no disabilities or with physical disabilities only to enroll in and complete college, with much higher levels of high school non completion than non-disabled young adults. The only difference between the physically disabled group and the non-disabled group is in not completing a high school degree. While over half of all non-disabled youth have enrolled in or completed college,

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[5] It is important to remember that that this distribution does not suggest that, for example, 19.81% of those with mental disabilities are age 25 (or older), but rather than 19.81% of students in grades 7-12 in 1994-95 were at least 25 years old in 2001.

slightly fewer physically disabled young adults have any college education and only 20% of learning disabled youth and 13% of mentally disabled youth have any college experience.

Regardless of disability status, most young adults are earning less than $20,000 annually. Much of this may be accounted for, at least in the physical disability and no disability groups by college enrollment. However, less than 20% of both the learning disability and mental disability groups have at least some college education meaning that we cannot account for their low incomes because they are forgoing work for school in young adulthood. In fact, these two groups have significantly higher levels of receipt of government assistance (recall the measure includes food stamps, AFDC, Supplemental Social Security Income, or Section 8 housing assistance) and lower levels of current employment. These two factors, coupled with the higher levels of little or no work experience among mentally and learning disabled youth translate into almost two million young adults facing poor employment and income prospects as they enter adulthood. Another interesting comparison here is the statistically similar percentages of non-disabled and physically disabled young adults who are currently working or have little or no work experience. This is especially noteworthy given Burkhauser and Daly's (2002) finding that "the greatest impact of federal government policy on people with permanent disabilities continues to be felt through income transfers rather than through employment protections" (p 214). The distinction between employment and income transfer appears from these results to be divided between those with physical disabilities on the one hand and those with other disabilities on the other.

Finally, youth with mental disabilities are considerably more likely to still be living at home with their parents and those with mental and learning disabilities have significantly higher levels of depression than young adults with no disabilities. Taken together, the picture of those with learning disabilities and mental disabilities is rather bleak in young adulthood compared to their non-disabled peers.

Finally, Table 3 shows the results of logistic regression models of demographic, work, education, and income, and disability on depression in young adulthood while controlling for depression in adolescence. It is important to control for prior levels of depression to establish causal ordering between the transition experience variables (work, education, income, living at home) and depression. Without controlling for prior depression it would be difficult to determine the causal ordering between variables measured at the same point in time. While I recognize that many transition variables mark an accumulation of experiences (schooling, etc.), using a prior level of depression as a control measure means we can assess the results as conservative effects of transition variables on young depression.

Model 1 in Table 3 shows the effects of just demographic variables of age, race, and sex on depression. It appears that compared to whites, blacks have almost 60% higher odds of depression in young adulthood and females have 50% higher odds of depression than males. The odds of depression Hispanics and those of other races are not significantly different than the odds for whites. The significant result for age suggests that with age, odds of depression decrease. Model 2 adds a control for disability. Without reducing by much the magnitude of odds for race, gender, and age, disability itself is a highly significant predictor of depression in young adulthood. Those with a disability are 1.85 more likely to be depressed than their nondisabled peers.

Models 3 and 4 include the effects of transition variables on depression. Looking first at model 3 we see that the addition of these work and education variables reduces to nonsignificance the effects of age and gender. Education appears to be linearly associated with disability, as those with a GED or no degree are 1.34 times more likely to be depressed than those with a high school degree, and those with some college education or a college degree are 38% and 53% lower odds of disability than those with a high degree only, respectively. Current work and past work experience both have significant effects on depression while income appears only marginally significant. Finally, disability remains significant in this model, with disabled individuals having 36% higher odds of depression than nondisabled young adults.

INSERT TABLE 2 ABOUT HERE

Finally, model 4 is a full model of depression in young adulthood than controls for depression in adolescence. Interestingly, with the inclusion of prior depression, gender and age regain significance, with females and younger respondents having higher levels of depression. The effects of Hispanic ethnicity and other race are non (or marginally) significant, but blacks still have 1.28 higher odds of depression than whites. Having little or no work experience significantly increases the odds of depression while currently holding a job decreases the odds of depression by 15%. The positive effects of education remain after controlling for prior depression, with college grads having the lowest odds of depression and those without a high school degree having the highest odds. Receiving government assistance remains significant while income moves from marginal to full significance; with increased incomes comes higher odds of depression. Finally, in neither model 3 or 4 does living with parents reach significance. Looking back to Table 2 shows significant differences between disabled and nondisabled young adults in rates of living at home. Perhaps the inclusion of disability in the models in Table 3 is wiping out the effect of living with parents on depression. Also, given the young age of the sample and the current trends in prolonged transitions to adulthood, it may be that living with parents well in one's twenties is no longer a cause for anxiety. Lastly, while prior depression is a significant predictor of depression in young adulthood, disability remains significant. With the inclusion of demographic, work and education, and even past depression, disabled young adults still have 25% higher odds of depression than nondisabled young adults.

Conclusions

Changes in disability policies and programs in the last two decades are expected to change the lives of disabled individuals. Yet, as the first cohort completes school and enters the labor force under the policies of the Americans with Disabilities Acts, these results suggest we have a long road ahead to reach full inclusion in a discrimination- and barrier-free world. Over 1 percent of young adults with learning disabilities and one-third of those with mental disabilities have no real work experience. These figures are a staggering three and 6 times higher than youth with physical disabilities or with no disabilities. Sociologists recognize the transition to adulthood as an important period of capital accumulation for individuals and having no work experience by one's early to mid twenties represents a significant barrier to later capital accumulation not only through work and income, but in social domains, as well.

These results suggest a need for reevaluation of current policies in school and beyond for individuals with disabilities. It appears that young adults with physical disabilities are faring quite well relative to their peers. In fact, almost no significant differences exist between those with physical disabilities and those with no disabilities, giving the appearance that schools and other institutions have done a reasonably well job of accommodating youth with physical disabilities. However, one notable difference between these two groups is in the percent with a

GED or no high school diploma, suggesting that physically disabled students may be dropping out of traditional high school settings entirely or completing equivalency degrees. And, while one significant age difference exists between physically disabled and non-disabled young adults, it appears that the higher rates of non-completion or completing a GED cannot fully be explained by youth still in the process of completing traditional high school coursework.

Burkhauser and Daly (2002) showed a picture of disability in the United States that has equally compelling arguments for success post-ADA as it has for failure. Given the findings on this study, it appears we must take a more nuanced look at disability to consider variation within this category (Scotch and Schriner, 1997). While the measures here suggest that young adults with learning or mental disabilities are lagging behind their peers, perhaps they are faring as well in other arenas such as marriage and family or other measures of well-being such as satisfaction, stress, or happiness. Future work will consider some of these other measures. Additionally, it will be important to further account for the range of variation not only across but within disability types (Scotch and Schriner, 1997). Measurement of disability might take into account level or degree of severity of disability and the effects of multiple disability types.

This study set out to show the ways disability is both the product of stratification and mechanism producing further inequalities. It appears and learning disabilities and mental disabilities are distinctly “raced” and “gendered” as minorities are much more likely to have mental disabilities and two times as many males as females have a learning disability. Further, at every level of education, at the most prevalent levels of income, and in two types of work experience, disability appears to produce further inequalities. These differences have meaningful and significant effects on young adult well-being such that mentally and learning disabled young adults are significantly more likely to live at home and show considerable signs of depression.

The results present a consistent picture of learning disabled and mentally disabled young adults faring more poorly than their peers with physical disabilities and no disabilities. Understanding these important demographic differences is important for disability policy. It appears many of the physical barriers to equal access so prominent in the disability rights movement and legislation through the 1990s have largely been eradicated through policies requiring accommodations in the workforce and in society on the whole. However, a new round of policy may be needed to bring learning disabled and mentally disabled young adults in this country up to the standards of their peers. Doing so will set the course for mentally, socially, and financially successful transitions to adulthood and beyond.

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Table 1: Demographic and Descriptive Characteristics of Young Adults age 19-25 in the United States, 2001

	Physical Disability			Learning Disability			Mental Disability			No Disability		
Variables	**Rate (%)**	**Std Err**	**Count***	**Rate (%)**	**Std Err**	**Count***	**Rate (%)**	**Std Err**	**Count***	**Rate (%)**	**Std Err**	**Count***
Gender												
Female	50.38^{c}	2.95	373,063	32.47^{abd}	2.08	450,803	49.60^{c}	4.00	205,515	50.42^{c}	0.67	9,789,474
Male	49.62^{c}	2.95	367,433	67.53^{abd}	2.08	937,745	50.40^{c}	4.00	208,834	49.58^{c}	0.67	9,627,497
Race												
White	75.07^{ad}	3.40	555,909	70.78^{d}	3.41	982,828	13.48^{abc}	4.02	55,866	68.36^{bd}	2.88	13,273,833
Black	12.64^{d}	2.26	93,592	15.77^{d}	2.70	218,941	48.56^{abc}	8.48	201,222	15.33^{d}	2.05	2,975,784
Hispanic	8.63^{d}	2.23	63,915	11.66^{d}	2.66	161,863	29.73^{abc}	7.00	123,190	11.54^{d}	1.67	2,241,677
Other	3.66^{ad}	1.25	27,080	1.79^{d}	0.74	24,916	8.22^{abc}	2.73	34,071	4.77^{bcd}	0.83	925,678
Age												
Age 19	13.04	2.59	96,574	7.66^{a}	1.81	106,313	11.86	4.68	49,153	13.15^{c}	1.53	2,553,516
Age 20	11.44^{ac}	2.18	84,727	20.34^{abd}	2.85	282,361	8.69^{ac}	2.93	36,022	15.91^{bcd}	1.72	3,088,469
Age 21	18.33	2.33	135,729	19.01	2.07	263,974	14.00	3.21	58,017	16.29	0.59	3,163,840
Age 22	16.18	2.36	119,842	15.68	1.67	217,738	18.62	3.91	77,136	16.68	0.97	3,239,556
Age 23	18.23	2.46	135,008	15.54	2.16	215,791	13.53	2.43	56,046	15.37	0.99	2,984,801
Age 24	15.47	2.17	114,526	11.58^{a}	1.47	160,797	13.49	2.91	55,895	16.54^{c}	1.05	3,212,404
Age 25	7.30	1.93	54,090	10.20	2.14	141,574	19.81^{a}	6.27	82,079	6.05^{d}	0.54	1,174,385
Education												
GED or no degree	21.61^{a}	2.99	159,989	28.85^{a}	2.67	400,633	31.45^{a}	5.23	130,326	12.23^{bcd}	0.87	2,374,332
High school degree	28.64^{cd}	2.51	212,098	51.98^{ab}	3.30	721,822	55.29^{ab}	6.39	229,104	31.18^{cd}	1.27	6,053,333
Some college	40.77^{cd}	3.29	301,870	17.30^{ab}	2.20	240,177	11.50^{ab}	2.77	47,656	44.55^{cd}	1.26	8,651,186
College Grad	8.99^{cd}	1.94	66,539	1.87^{ab}	0.67	25,916	1.75^{ab}	1.30	7,263	12.04^{cd}	1.13	2,338,121
Income and Work												
\$0-9999	46.07^{d}	3.06	341,164	51.16^{ad}	2.39	710,442	59.86^{abc}	4.01	248,048	44.00^{cd}	1.48	8,542,946
\$10000-19999	30.25	2.79	224,034	25.18^{a}	2.08	349,615	23.14	3.25	95,899	29.35^{c}	0.73	5,698,781
\$20000-29999	14.45	1.98	106,968	14.37	1.77	199,593	10.48^{a}	2.87	43,434	16.76^{d}	0.72	3,253,848
\$30000-39999	4.92	1.39	36,469	5.82	1.07	80,818	4.40	1.55	18,235	5.65	0.44	1,096,246
\$40000 and over	4.30	1.20	31,861	3.46	1.10	48,081	2.11	1.23	8,733	4.25	0.36	825,151
Gov't Assistance	14.13	2.00	104,653	19.83^{a}	2.48	275,335	20.70^{a}	3.21	85,787	10.08^{cd}	0.59	1,957,262
Currently Working	68.48^{d}	3.20	507,065	59.52^{ad}	4.80	826,519	44.54^{abc}	6.29	184,532	71.17^{cd}	0.95	13,818,962
Little work Exp.	4.89^{c}	1.21	36,182	17.63^{abd}	6.09	244,734	32.83^{abc}	7.92	136,030	4.70^{cd}	0.40	913,030
Well-Being												
Live at Home	44.58^{d}	3.43	330,116	52.65^{a}	3.53	731,022	61.93^{ab}	4.90	256,612	38.82^{cd}	1.30	7,537,670
Depression	22.26^{d}	2.48	164,860	28.58^{ad}	2.19	396,906	39.30^{abc}	3.84	162,851	18.32^{cd}	0.61	3,557,306
Sample N			543			715			238			12,762
Total Count in Population			740,496			1,388,548			414,349			19,416,972

Source: National Longitudinal Study of Adolescent Health (Add Health). Estimates generated using Stata 9.0.

* Weighted totals represent estimates of U.S. students in grades 7-12 in the 1994-1995 school year. Most recent data collected in 2001 when youth are approximately 19-25 years old.

Note: a = significantly different than no disability b = significantly different than physical disability c = significantly different than learning disability d = significantly different than mental disability. Significance evaluated at $p<0.05$.

Table 2: Differences in Demographic and Descriptive Characteristics by Disability
for Young Adults age 19-25 in the United States, 2001

	Disability		**Nondisability**		**Significance**
Variables	**Rate (as %)**	**Std. Error**	**Rate (as %)**	**Std. Error**	**p-value**
Depression	28.49	1.56	18.32	0.61	p<0.001
Prior Depression	38.17	2.31	27.51	0.77	p<0.001
White	62.70	3.58	68.36	2.88	p<0.05
Black	20.20	3.33	15.33	2.05	p=0.08
Hispanic	13.72	2.40	11.54	1.67	NS
Other	83.61	2.53	84.50	2.00	NS
Males	59.53	1.55	49.58	0.67	p<0.001
Age*	3.95	15.39	3.79	11.87	NS
Education*	2.04	3.76	2.56	3.48	p<0.001
Income*	1.84	4.52	1.97	3.38	p<0.01
Live at Home	51.81	2.67	38.82	1.30	p<0.001
Currently Working	59.69	3.70	71.17	0.95	p<0.01
Little work Exp.	16.39	4.66	4.70	0.40	p<0.05
Gov't Assistance	18.31	1.64	10.08	0.59	p<0.001

Source: National Longitudinal Study of Adolescent Health (Add Health) (N=14, 258)

Note: Estimates generated using Stata 9.0 and Taylor series linearization methods to estimate variance and standard error of the estimates.

* Age, Education, and Income are shown as mean values for ordinal measures and p-values represent signficance levels for mean differences between disabled and nondisabled groups

Table 3: Logsitic Regression Results Predicting Depression Among Young Adults age 19-25 in the US, 2001

Variables	**Model 1**			**Model 2**			**Model 3**			**Model 4**		
	Odds Ratio		Std. Err	Odds Ratio		Std. Err	Odds Ratio		Std. Err	Odds Ratio		Std. Err
Demographic												
Age	0.955	**	0.016	0.953	**	0.016	0.989		0.018	0.960	*	0.018
Black	1.596	***	0.128	1.560	***	0.124	1.294	**	0.100	1.213	*	0.095
Hispanic	1.270		0.210	1.226		0.204	0.991		0.166	1.016		0.170
Other	0.747	†	0.116	0.732	*	0.115	0.676	*	0.104	0.754	†	0.114
Female	1.508	***	0.085	1.556	*	0.088	1.565		0.091	1.355	***	0.081
Work and Education												
Little work Exp.							1.354	*	0.176	1.443	*	0.202
Currently Working							0.847	*	0.056	0.847	*	0.058
GED or no degree							1.359	***	0.113	1.263	*	0.112
Some college							0.621	***	0.041	0.678	***	0.045
College Grad							0.467	***	0.062	0.529	***	0.072
Live at Home							1.082		0.070	1.095		0.072
Gov't Assistance							1.443	***	0.121	1.367	***	0.113
Income							0.941	†	0.030	0.941	†	0.029
Prior Conditions												
Disability				1.835	***	0.161	1.362	***	0.105	1.282	**	0.110
Prior Depression										2.869	***	0.195

Source: National Longitudinal Study of Adolescent Health (Add Health). N=14,258.

Note: Estimates generated using Stata 9.0 and Taylor series linearization methods to estimate standard errors.

† p< .10 * p<.05 ** p<.01 ***p<.001