
Poverty, Shocks and School Disruption Episodes among Adolescents in South Africa

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CSDS Working Paper No 35

December 2002

ISBN No 1-86840-493-5

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EDUCATION, ASSETS AND POVERTY REDUCTION

Public policy concerned with the reduction of poverty conventionally adopts some mix of two broad forms of intervention. Growth based strategies place emphasis upon a general improvement in economic activity through which it is anticipated the position of the poor will be improved. Policies of macroeconomic stability, labour absorbing industrial strategy and good governance may be included within this category of intervention. Targeted interventions recognise that groups may exist in society whom the benefits of growth may not reach, or may take an unacceptable time to reach. Specially designed policies are therefore required which may deliver services, transfer assets or indeed, transfer income into the hands of identified groups. Land reforms, child support grants and public works programmes are examples of this category of intervention.

Policies may also attempt to achieve indirect behaviour changes thought to be desirable while simultaneously making a transfer. The provision of training in public works programmes is an example of this form of intervention in which it is hoped that in addition to the income and public asset that is generated, the skills gained may be used in self-employment. Recently, the provision of targeted incentives to support school attendance has been identified as a possible policy option for the reduction of poverty (Behrman *et al* 2001; Schultz 2000; Schiefelbein 1997; Anker and Melkas 1996). By providing a support grant contingent on school attendance, policy simultaneously encourages the building of human capital as well as directly improving household income. Additional benefits may be through a reduction of household reliance on child labour (Ravallion and Wodon 1999; Grootaert and Kanbur 1995) and improved gender equity within the household (Behrman *et al* 2001).

Resolving the relative costs and benefits of such interventions are the central concern for policy analysis. Such analysis rarely approaches its assessment of costs and benefits from the perspective of those who are poor. Despite the availability of both quantitative and qualitative information on individuals, households and communities, analysis and evaluation often adopts an ex-post perspective, assessing the inputs and outputs of existing interventions rather than starting from the needs and behaviour of the poor and assessing the possible impact of an intervention upon these needs. However, increasing attention on the relationships that condition access of the poor to the resources that they require has helped to bring about a shift in emphasis. In particular,

understanding the livelihood and asset accumulation strategies of the poor, and finding ways in which these can be supported offers a promising new direction for policy analysis (Carter and May 1999; Moser 1998, 1996).

This paper uses data collected from a sample of households and adolescents in South Africa to demonstrate the priority placed by the poor on the education of their children as an asset to escape poverty. The theoretical basis for this analysis will be substantiated by introducing the asset-vulnerability framework developed by Moser (1996) and others, and outlining a poverty-based theory of school disruption. In the light of this, the impact of poverty and shocks at the household- and adolescent levels will be discussed. The results indicate that the poverty-based theory of school disruption does not fully account for drop-out or grade repetition. Poverty is predictive of school disruption, female adolescents are particularly vulnerable to drop-out episodes and adolescent pregnancy emerges as an important influence. However, shocks to a household do not seem to be a strong predictor of school disruption. The paper shows that poor households attempt to defend the education of their children in the face of a range of shocks. Means of supporting school enrolment and attainment of adolescents in poorer households is considered. The aborted school feeding scheme adopted by the first democratic government of South Africa is noted, yet it is argued that programmes that offer incentives for school attendance could rather be visited as a mechanism to assist the poor in forming their own pathways out of poverty. Attention is drawn to potentially successful interventions of this kind in Latin America and South Asia in which an income grant is made to families who keep their children at school. It is suggested that a targeted, behaviour supporting strategy such as this may be a policy option for South Africa given the priority placed by the poor on the education of their children. Finally, the importance of channelling resources to schools in order to improve school quality is underscored as the context within which these schemes should take place, as well as some means of removing school fees that may be preventing poor children from attending school.

THE ADOLESCENT TRANSITION AND POVERTY-BASED THEORIES OF SCHOOL DISRUPTION

The time of transition from adolescence to adulthood is a critical period that can shape the adult life span. It is an extraordinarily stressful time, which involves complex biological, physical, behavioural and social

growth and change second only to infancy. During adolescence the nature of the stresses encountered, their relevance for the pursuit of identity, and the coping responses available all have important implications for life-stage outcomes that later emerge (Swanson *et al*, 1998; Davis and Vander Stoep 1997) Carnegie Council on Adolescent Development 1995. One manifestation of the stress that adolescents experience during the transition is school disruption in the form of early school leaving and grade repetition.

The issue of school drop-out distinguishes South Africa from other countries in sub-Saharan Africa. Filmer and Pritchett (2000: 3) identify a South Asian/Western-Central African pattern of enrolment and drop-out characterised by low levels of enrolment and contrast this to a Latin American pattern with high enrolment in grade two but high drop-out rates thereafter. Africans in South Africa fit the latter pattern with only 2.7 percent of those between six and 24 years of age having never enrolled in grade one, but with Africans in this age group attaining a median of grade seven compared to Whites who attain a median of grade ten (Census 1996). Other authors note that almost all children in South Africa complete primary schooling, but that only 30 percent of mainly African 20 to 24 year olds have completed secondary school (Maharaj *et al* 2000).

Considerable attention has been given to explanations for school drop-out, and a number of reasons for early school leaving have been found (Ekstein and Wolpin 1999; Tanner *et al*, 1995; Roderick 1993). Among these are lower school ability and/or motivation, signs of disengagement from school, and conflict with school authorities. Further, those youths who are prematurely making the transition to adult roles, through work or through parenting, are also more likely to leave school early. Yet it is the relationship between family background and dropping out that is particularly notable, with youths from poor families, those from single-parent families, and youth of poorly educated parents in unskilled and semi-skilled occupations, who have fewer educational advantages and fewer role models that have gone on to higher education, and more likely than others to leave school before graduating. It is also worth noting that in South Africa adolescent pregnancy is identified as a major cause of interrupted and discontinued education, and is reported in the South African Participatory Poverty Assessment (SA-PPA) as such (May *et al* 1998). Recent policy reform permitting mothers of school-going age to return to school after childbirth suggests that regulations should no longer result in the persistence of such behaviour.

Grade retention is a controversial educational practice that has been highly debated among educationalists (Eisemon 1997). Indeed retention rates have been found to depend largely upon school system policies and educators' attitudes toward the benefits of retention (Roderick 1993), and accumulated research has shown retention to be either ineffective or harmful (Reynolds 1992; Holmes 1989). Several background and demographic factors have been shown to substantially increase the chances of being retained in grade. Poor, male students, with evidence of disability and poor health status, from larger families and who attend a high poverty school are all more likely to be retained (Karweit 1999). While variation between and within countries prevents broad generalisations, on the whole poverty, ethnicity, gender and remoteness all combine with poor instructional conditions, bad teaching and arbitrary assessment of student performance to produce high repetition rates. Yet it is important to note that in African countries, which have the highest repetition rates, repetition does not necessarily signify academic failure, and students with academic potential may repeat to improve their chances at passing entrance examinations for secondary and higher education (Eisemon 1997). Failing a grade is also found to be strongly associated with dropping out of school in later years. Grissom and Shepherd (1989) find that retaining youths increases rather than decreases their risk of dropping out that cannot be explained by their poor achievement. Therefore efforts to reduce the incidence of grade repetition both early and late in students' school careers may in fact be an important means of dropout prevention (Roderick 1993).

Reporting on education in the South African context, Krige *et al* (1994) underline high repetition rates as a noteworthy educational problem. Repeating a standard is a demotivating and negative experience for a child, as well as a drain on resources, and a large number of repeaters in a standard results in the presence of many children older than the norm for the class, which may result in both educational and social problems. In some parts of South Africa repetition rates reach levels at which more than one child in every five is repeating a grade, and Durban, along with other large urban areas in South Africa, is recorded as having repetition rates of under 12 percent. In a recent assessment of progress towards meeting South Africa's goals in the provision of basic education (Department of Education 2000), it is noted that on average, 17 percent of grade 4 learners repeated one or more grades. Maharaj *et al* (2000) highlight another dimension of the grade retention phenomenon in South Africa, with children of different race groups accomplishing primary education at different speeds, and pathways

through the education system becoming increasingly divergent through secondary school. Through an analysis these authors show that students currently enrolled who have completed lower primary school should be age 11 or 12, and that while this was the case for the majority of Indians and whites, 11 to 12 year olds were found to make up only 36 percent of African children who completed lower primary and continued on in school, with more than a fifth age 15 and older. Other literature (RDP 1996) emphasises that slow progression of Africans through the education system is due to the disadvantages of poverty, second language learning and poor quality of schools. The latter factor is reiterated by Eisemon (1997) who describes repetition rates as a powerful indicator of the performance of an education system.

A poverty-based theory is therefore a plausible explanation of school disruption. This link needs some explanation as income and consumption approaches to poverty analysis have been criticised for their limited ability to account for complex external factors which affect the poor, and their responses to economic difficulty (Moser 1998). These approaches have also been criticised for the fact that they obscure other important aspects of deprivation and their causes (Satterthwaite 1997). Among such aspects that have been identified, insecurity and vulnerability are pertinent for the purposes of this paper. While insecurity is defined as the exposure to risk, vulnerability is the resulting possibility of a decline in well being of individuals, households and communities in the context of a changing environment (World Bank 2000; Moser 1996). This concept captures change processes as people move in and out of poverty (Moser 1998). The World Bank (2000: 140) notes that transitory poverty is a large part of total poverty in many settings, and in many countries this group is larger than those that are chronically poor. Roberts (2001) uses the KwaZulu-Natal Income Dynamics Survey (KIDS) and finds that this holds true for South Africa as well, while the SA-PPA showed that the poor regard vulnerability as an important characteristic of poverty (May *et al* 1998).

Vulnerability is useful in analysing livelihood security, which includes exposure to risks, shocks and stress (Moser 1998). Poor people are among the most vulnerable in society because they are the most exposed to a variety of risks. Their low income means that they are less able to save and accumulate assets, which in turn restricts their ability to deal with a crisis when it occurs. Moser (1996) has developed a classification of assets, which is identified in terms of an 'asset-vulnerability framework'. Various types of vulnerability can be

associated with each asset. These assets include labour, human capital, productive assets, household relations and social capital. An asset-vulnerability framework, then, goes beyond a static measurement of the poor, and models a household's vulnerability as a function of the number, diversity and value of the assets it owns. From this view, the more assets people are able to draw upon in the right combination, the greater their capacity to protect themselves against external shocks; while the fewer less assets available, the greater their insecurity (Devereux 1999; Moser 1998). However, Carter and May (1999) point to the fact that the poor are poor not only because they have few assets, but also because they are constrained in their ability to effectively accumulate, protect and utilise the assets that they do have, including the human capital present in the household. In a later article, the same authors demonstrate how shocks contribute towards persistent poverty and create a poverty trap from which poor households are unable to exit (Carter and May 2001). Ownership of assets – human, physical and financial savings – has also been found to lead to a significantly higher probability of school attendance (Grootaert and Patrinos 1999: 6) and thus in the further accumulation of assets in the form of human capital. If such assets are not present, it is difficult for the household to protect itself against external shocks, which in turn means that children may be forced to leave school as part of a household coping strategy.

Shocks can be classified by their nature and by the level at which they occur. Households attempt to minimise the impact of shocks they encounter and the risk of the household through the use of coping strategies, which are seen as a collection of responses to a negative shock (Devereux 1999). It should be noted that while the term 'coping strategy' was given new meaning in the food security literature (Moser 1998), the use of the term has proved to be problematic since it implies that the household does in fact cope, whereas many households do not actually cope in these circumstances. Coping strategies may even become less effective over time and even harmful for long-term development (Davies 1996). Devereux (1999) also warns that the term overstates the resilience of the poor. Ultimately these coping responses seek to avert the breakdown of the household as a social and economic entity (Stewart 1998).

Households may use a number of separate coping strategies in parallel, each of which is followed with greater intensity at increasing cost or irreversibility as conditions deteriorate (Devereux 1999). The choice of strategy is dependent on the cause of the shock, the type of livelihood system, household criteria (such as household size or the age of

household members), as well as internal life-cycle factors, and income (Moser 1998; Stewart 1998). According to Corbett (1988), not only do households plan how they are going to respond, but there is also a distinct sequence in what they do. Strategies that have little long-term cost are adopted first, while strategies with long-term cost that are difficult to reverse are adopted later (Devereux 1999).

Different household assets play different roles in the process of coping (Davies 1993). Actions that are undertaken by individuals include cashing in insurance, using savings or selling assets, borrowing, and making use of support networks for transfers or loans. If these measures are insufficient, households may increase their labour supply, which involves using more members and working more hours. If these attempts fail, households may be forced to reduce consumption and go hungry. Because the poor own fewer physical assets that can be sold in times of crisis, they are more likely to increase their labour supply, with women and children often called upon for this purpose at times of crisis (World Bank 2000).

An obvious tension exists between the contributions that adolescents can make to family income and investments in their education. Increasingly, household decision-makers in economic hardship have to make difficult choices about basic needs, which have a crucial impact on the immediate and future well-being of children (Howell 1995). Roe (1992, as cited in Devereux 1999: 34) describes children as an 'important link in the survival mechanism chain' for the low-income urban dweller. As the household matures, children move from being net consumers to net producers, yet the pace of this natural transition process may be rapidly increased when a shock occurs (Devereux 1999). In developing countries, those charged with decision making in poor households are often compelled by their economic circumstances to rely heavily on adolescents to contribute to household welfare, through employment in the labour force, or by undertaking household tasks so that adults are able to spend more time in employment or self-employment. Each household will allocate the time of its children to whatever activities are perceived to have the highest private return. Supply factors at the household level, such as the age and gender of the child, the household size, and the education and employment of the parents, all play a role in this process (Grootaert and Patrinos 1999).

According to the World Bank (2000), the poorest households will make every attempt to avoid a drop in income that could push them below the survival point, even if it means using the labour of their children. Grootaert and Patrinos (1999: 6) cite several analysts who have

highlighted the child labour decision as part of the household's risk management strategy: Grootaert and Kanbur, 1995; Cain and Mozumder, 1980; Mendelievich, 1979. When a crisis occurs, and households are not able to borrow, or when adult unemployment is high or wages low, children may be pulled out of school and sent to work.

In an analysis of household strategies to cope with the anticipated production losses resulting from illness, the reallocation of tasks among household members was found to be the most frequently chosen strategy. However, coping behaviour was found to jeopardise the household's asset base, with household members emerging from an illness period poorer and more vulnerable, and the neglect of activities such as education having a negative effect on household welfare in the long run (Sauerborn, Adams and Hien 1996). In this light the effect of the HIV/AIDS epidemic on the household is also stark. A study undertaken in Uganda has shown that death from AIDS is associated with reduced schooling for children (Chipfakacha 1999). Another Ugandan study (Gilborn, Nyonyintono, Kabumbuli and Jagwe-Wadda, 2001) finds day-to-day attendance to be lower in households with people living with HIV/AIDS than for orphans, and this suggests that adult illness may be taking a toll on the education of older children. When these older children were asked what impact parental illness had on their education, 26.0 percent reported that their attendance declined, while 27.6 percent reported that their school performance declined as a result of their parents' illness. Many of these children stay home to care for a sick parent or to care for children, have increased household responsibilities, and have less money for school expenses. Apart from this, own emotional distress interferes with school and absences affect grades. An even more recent analysis of Demographic and Health Survey data in Zimbabwe, Kenya, Tanzania, Ghana and Niger (Bicego, Rutstein and Johnson, 2002) indicates that losing one or both parents is significantly associated with diminished chances of being at the appropriate grade level for age.

In South Africa these effects are also becoming apparent, and it has been suggested that an increasing number of children are suffering from an inability to attend school and that this is linked to the rising incidence of HIV/AIDS and unemployment (Streek 2001). Recent research (Badcock-Walters, Heard and Wilson 2002) in KwaZulu-Natal focuses on the impact of HIV/AIDS on education, and documents a decline in enrolment, learner and educator absenteeism, which leads to loss of contact time, and an increase in the number of orphans. It is

evident that this will have profound implications for the future viability of households, as well as for individual members of the household, as economic and human development prospects are compromised for short-term benefit, and the schooling that may be lost leads to a lifelong loss in earning ability for these children (Devereux 1999). As Moser points out, the risk is that poverty will be perpetuated from one generation to the next (Moser 1996). Ultimately the more negative consequences will be borne by some future household in which the adolescent will play a decision-making role when he or she grows up, and with less education it will be more difficult to move out of poverty.

Finally, it is widely understood that households may be a source of gender inequality in access to, use of, and control over resources, and that poverty may occur to a varying degree, with women and girls being most vulnerable to differential treatment due to their lack of power and their youth (Wolf 1990; Dwyer and Bruce 1988). Because of divergent opportunity costs for investments in boys and girls, household decision-makers may allocate food, provide health care, and invest in education differently by gender (Kimmel and Rudolph 1998). Therefore, a shock that affects the household as a whole will tend to have different effects on different household members (World Bank 2000; Feldman 1992). Unequal rights and obligations on the basis of gender and age lead to differences in the ability to cope with economic difficulties, which has important implications for well being and the ability to respond to new opportunities (Moser 1998, 1996). Hence, a coping strategy that works for some members may disadvantage others. While evidence is mixed on gender bias in response to shocks, according to the World Bank (2000: 145) some studies have found that women tend to suffer more from negative shocks than men.

The coping strategy that is of interest to this paper involves children leaving school as part of a household response to a shock. Some of the findings from the SA-PPA reveals that children are not continuously parented or schooled, and that they are frequently moved around due to crisis or as a coping strategy for poverty, with the result that they may be kept out of school to help at home (May *et al* 1998). Furthermore, the study shows that in the event of a financial crisis, girls may be more at risk of being taken out of school than boys, as women are prejudiced in terms of furthering their education, because it is not seen to be a worthwhile investment to educate the female child who will eventually marry into another household. Drop-out rates for girls can be high, and these tend to increase when economic conditions worsen (UNDFW 2000).

EVIDENCE AGAINST A POVERTY BASED THEORY OF SCHOOL DISRUPTION

While there is substantial evidence for a poverty-based theory of adolescent drop-out, it is also important to table literature that would support a null hypothesis, that is, that poor households regard their children's education as an important asset to defend, and will thus try to avoid withdrawing their children from school under shock conditions.

Strikingly in every part of the world, participants in the 'Voices of the Poor' study conducted by the World Bank (2000), mentioned child labour as an undesirable coping mechanism. Hence some vulnerable households may balance their risk against the maintenance of assets which allow for greater resilience in the future, and if faced with the same crises may choose to keep their children in school rather than send them out to work. Although these households are found to be poorer in income terms, in the longer run this strategy reduces vulnerability through consolidating human capital as an asset. In Moser's (1996) urban study it was found that children who worked did not necessarily drop-out of school, but against all odds, attempted to keep studying. In an analysis of the educational attainment and contributions to family welfare of adolescents in a rural area of the Phillipines, Bouis (1998) finds that most parents do not believe that children should be taken out of school in order to work for pay. As an alternative, other household members may be called upon to make sacrifices so that adolescents may further their education. This is in line with findings in the SA-PPA, which indicate that among both the rural and the urban poor, education is consistently seen as the highest priority need and the most effective route out of poverty, and therefore often protected at great cost. Education is seen as a means to a better life, while a lack of it is held responsible for low wages, unemployment and crime. Since the principal asset of the poor is labour time, education increases the productivity of this asset (May *et al* 1998).

Financial assistance, particularly in the form of paying for school fees, is a frequently mentioned form of support offered by social and kin networks in the South African context, and gaining access to education is seen as the way in which the household as a whole can benefit. A quote from a participant in the SA-PPA highlights this claim: 'if you go to school, you can get food for the family' (May *et al* 1998: 112). Findings of an in-depth rural study of 30 extremely poor households

with malnourished children corroborate these findings (Sogaula *et al* 2002). In the study it is shown that illness or death were not related to educational participation, and that half of those households that had sold assets in the prior 12 months did so to cover educational expenses. The higher the expenses incurred by children schooling, the more likely it was that the household would sell one of its assets. Perhaps the key to explaining this alternative perspective is encapsulated in Davies' (1993) observation that coping strategies are concerned with livelihood system success rather than failure. From this view, preserving human capital would contribute to the long-term prospects of the livelihood system, through the development of growth linkages.

Furthermore, the literature on adolescent development shows that it is not just adults in the household who are described as major actors, but children themselves. In the SA-PPA, it is noted that household actions often include negotiations for rights, the strategic use of available power, and attempts to gain control over income generation, and that children within the household are often involved in such adaptive action (May *et al* 1998). Therefore, adolescents in shock circumstances could resist the pressure from the household to leave school, and instead make every attempt to ensure that they do not drop-out, through part time work, for example, in order to ensure their future well-being.

A cause of drop-out frequently cited in the developed country literature is that of leaving school to work. However, with unemployment rates in the order of 24 percent (using a narrow definition) and 38 percent (using a broad definition), and less than 40 percent of the working age population actually working (Klasen and Woolard 2001:2), this explanation would not seem to apply to the same extent in South Africa. Negative job prospects may in fact provide an incentive to stay in school longer. Klasen and Woolard (2001) indicate that lack of public support for the unemployed young appears to lead to marked changes in the household formation patterns of the unemployed, principally a long delay in leaving the parental home and deferred marriage and child-bearing.

While the poverty-based theory of drop-out emphasises that the effects of shocks within the household will be unequal in gender terms, and that more girls than boys will drop-out of school as a result of poverty and shocks, there is also evidence to the contrary. The United Nations Development Fund for Women (UNDFW 2000) notes that while the most serious gender gaps in terms of secondary education enrolment are to be found in sub-Saharan Africa, South Africa is one of five

countries out of the 34 countries listed, where the relative disadvantage for girls has been eliminated, and indeed where there is a reverse gender gap. Lloyd *et al* (2000: 496) show that in 1993, 96 percent of girls, compared with 93 percent of boys between the ages of 15 and 19 years had completed four or more years of schooling. The 1996 census shows very similar educational achievements for young women and men in the age group 16 to 25, and that 60 percent of young women as opposed to 57 percent of men had completed grades seven to 11. Moreover, in 1997 the absolute level of girls' net enrolment in secondary school in South Africa was extremely high at 97 percent (UNDFW 2000: 69). In fact, among the poorer quintiles girls had higher primary and secondary enrolment rates than boys (World Bank 1995).

Lloyd and her colleagues speculate that when parents turn to their children for contributions to the household in times of economic difficulty, boys may be more able than girls to make such contributions in the context of strong cultural constraints and differential treatment of girls. Indeed, recent studies in some more urbanised countries suggest that prevalent cultural ideas of masculinity are encouraging boys to drop-out at higher rates (UNDFW 2000: 67). In the South African context, a number of reasons can be advanced for this. Young women might stay in school longer on average than men because matriculation opens the way to nursing and teaching, two of the few careers which are seen to be available to women. In contrast, young men may experience more pressure to look for work as manual labourers. Job experience may therefore be held to be more important for boys, whereas for girls more value could be attached to graduation. Families may be more inclined to protect the education of the children from which they expect to receive greater returns later in life. In the case of South Africa, boys may migrate to cities in order to find jobs and if successful, make no remittances home while girls might live at home for longer and contribute to the family pot.

This discussion suggests that a number of fundamental research questions should therefore be raised in terms of the relationship between poverty and school drop-out by adolescents in South Africa. Are adolescents in poor households particularly affected by livelihood shocks? Are they unintended victims of household coping strategies, who have to leave school? Alternatively, do households try to defend the future of their children as their most important asset and their pathway out of poverty? If so, could public policy reinforce this

behaviour, or would a transfer ‘crowd out’ private investment in education?

THE DATA

Data from the study of Transitions to Adulthood among Adolescents in Durban, South Africa, allows us to investigate these issues, and opens up an analysis of the generational dimensions of poverty. This panel study has taken place in the third largest city in South Africa, and has relevance as an urban study, for reasons ranging from the rapid urban population growth taking place (Pick and Obermeyer 1996), to the PIR’s recognition of urban poverty as a policy problem which is growing in scale and visibility (May 1998). One of the primary objectives of the study has included documenting patterns and trends in the incidence and timing of key events during the adolescents’ transition to adulthood, of which school leaving is one. The focus of the Transitions study has not been on the issue of household shocks, and the data have not been tailored for these purposes. However because rudimentary shock data has been gathered, it has provided a unique opportunity to look at how adolescents are affected by poverty.

The data used in this paper are based on the first round of data, collected in September and October 1999. Two administrative areas within the province of KwaZulu-Natal – the Durban Metropolitan and Mtunzini Magisterial Districts – were selected and their combined populations provide the sample for this study. These administrative areas were purposively selected to ensure a variety of urban, transitional and rural regions within the province, although the urban group from the urban areas of both districts comprises the majority (77 percent) of the sample, as compared with the rural group (23 percent), which is from the Mtunzini Magisterial District.

A modified multi-stage cluster sample approach was drawn for this probability study, and 120 census enumeration areas (EAs) were randomly selected from a sampling frame of all EAs in the two districts. A total of 2007 structured interviews were conducted with households that contained adolescents between the ages of 14 and 22 years in 118 of the selected segments. 3096 individual interviews were completed with adolescents in these households that fell within this age group, and this captures adolescents at different stages in their transition to adulthood. For the purposes of this analysis 1974 of these household interviews and 3013 adolescent interviews have been used, where information on both could be linked. Reference should be made

to the report on the first wave of the transitions to adulthood study for additional details (see Rutenberg *et al* 2001).

The households and adolescents included in this study enable analyses both at the household- and individual levels. Household membership is defined as those individuals who (1) live under the same 'roof' or within the same compound, homestead or stand, (2) when they are together share food from a common source, and (3) contribute to or share in a common resource pool. Over three-quarters (76 percent) of these adolescents are African, 16 percent are Indian, 6 percent are white and 2 percent are coloured.¹ Just over half (55 percent) of the adolescents are female, while the average age is approximately 17 years (mean = 17.5). Further, 72 percent of the adolescents in the sample are currently in school. Per capita poverty lines have been constructed, and statistics have been computed for per capita poor households (n=1087) and per capita ultra-poor households (n=598). Although itself not a perfect measure, total monthly expenditure is widely regarded as a preferable measure of household material well-being, as opposed to income which is regarded as a poor proxy for standard of living (Carter and May 1999). Total household expenditure comprised of household food expenditure, non-food expenditure and expenditure on infrequent items was used to calculate whether a household was poor or ultra-poor. Households with a per capita expenditure of less than R250 a month were defined as poor, based on the poverty line used in the recent Stats SA (2000) report on poverty. Following Carter and May (1999), lower poverty lines which are half the amount of the upper poverty lines were used, and ultra-poor households are defined as living on less than R125 per capita per month. Given the limitations of poverty measures in general, it seems reasonable to use this measure since some method of defining the poor and the non-poor was required in this study. It was found that 57 percent of households are poor, which is reasonably close to the estimated poverty rate of 50 percent for KwaZulu-Natal (Stats SA 2000).

Table one enables an assessment of the relative wellbeing of this sample in terms of social and economic indicators. These results compare with other studies of poverty in South Africa (May, Woolard and Klasen 2000; Klasen 1997; World Bank 1995). The poor, and particularly the ultra-poor have strikingly less access to services, shelter, education and employment than the non-poor. They are more likely to be female headed, African and live in larger households.

Table I: Characteristics of households in Durban (means and percentages)

Household characteristics	Households		
	Non-poor (n=832)	Poor (n=1087)	Ultra-poor (n=598)
Mean household expenditure (Rands/month) *	3860.01	851.72	654.49
	<i>3214.95</i>	<i>490.38</i>	<i>279.87</i>
Mean per capita expenditure (Rands/month) *	811.77	116.40	76.96
	<i>754.63</i>	<i>56.03</i>	<i>26.70</i>
Percentage African	43.70	93.40	95.90
Percentage female headed	34.90	41.70	41.20
Mean years of education (head)	9.80	8.00	7.90
Percentage head employed	69.70	59.30	55.90
Mean household size	5.20	8.00	8.90
Number in household employed	1.90	1.70	1.70
Percentage of hholds children never attended school	0.30	0.70	0.90
Number in household educated to gd 10	2.80	2.60	2.50
Percentage permanent house	82.60	47.10	40.70
Percentage internal piped water	78.10	32.50	24.50
Percentage flush toilet	81.70	37.50	28.80
Percentage electricity	89.90	70.10	63.30

Note:

(1) Standard deviations in italics;

(2) At the time of the survey the South Africa Rand was worth approx. US\$0.14.

THE EXPERIENCE OF SHOCKS IN HOUSEHOLDS IN DURBAN

On the whole, a substantial proportion (41 percent) of all households in this sample reported that they had experienced some type of shock during the reference period. These shocks include demographic shocks – either the death of a household member (19 percent of households), the injury or illness of a household member (15 percent), or abandonment or divorce (2 percent). Economic shocks include the loss of a job of a household member (14 percent), the loss of a remittance to a household (4 percent), and the loss of a government grant to a household (2 percent). Asset-livelihood shocks are either defined as theft, fire or the destruction of property (10 percent), business failure or bankruptcy (4 percent), or the loss of crops or livestock (2 percent). In all, while 17 percent of households have experienced economic shocks and 13 percent of households have experienced asset-livelihood shocks, it is demographic shocks that occur most often (29 percent of

households), with the death of a household member the most frequently occurring of these.

In the SA-PPA the death of family members surfaced as one of the more severe shocks, capable of pitching vulnerable households into poverty. If one considers combinations of shocks, it is this one that is experienced most often in combination with other types of shocks. The interaction of shocks also occurs, although relatively infrequently. Eight percent of households have experienced both demographic- and asset-livelihood shocks, while a further 8 percent have experienced demographic- and economic shocks, and 4 percent have encountered both economic- and asset-livelihood shocks. The experience of shocks is, however, slightly different to the results recorded in the SA-PPA. Where the loss of employment was the most commonly occurring shock in many of these studies, in this analysis it is the third most common shock. However, the types of shocks that occur most often among this sample of households are the same as those noted in the SA-PPA, namely death, illness, loss of employment and fire (May *et al* 1998). Amis (1995: 151) describes two studies in which the illness of a major income earner has been highlighted as having the greatest impact on the household in terms of frequency and magnitude. A considerable proportion of the households under review experienced this type of shock, and it could be speculated that this is due to the high incidence of HIV/AIDS in KwaZulu-Natal, which has consistently displayed the highest prevalence rates in South Africa (HEARD 2001).

Table II: Experience of each type of shock among poor and non-poor households

Type of shock	Households			
	Poor/Non-poor		Ultra-poor/Non-Ultra-poor	
	Pearson Chi-Sq.	p	Pearson Chi-Sq.	p
Demographic	19.454	0.000**	17.157	0.000**
Economic	4.415	0.036*	14.345	0.000**
Asset-Livelihood	10.981	0.001**	9.942	0.002**
All	12.985	0.000**	19.12	0.000**

* p <= 0.05

** p <= 0.01

In addition, the poor are more likely to experience shocks than the non-poor, with 48 percent of ultra-poor households in the sample having

experienced a shock in the last 24 months, compared to 45 percent of the poor and 37 percent of the non-poor. Further, households that are poorer experience significantly more of each type of shock than those that are not poor, as can be seen in table two. These data support findings that the poor are most exposed to a wide array of risks, and that living with risk is part of life for poor people (World Bank 2000: 135)

Moreover, not only are poor and ultra-poor households more likely to experience shocks, they are also likely to experience more shocks than those households that are not poor. Fourteen percent of poor households have experienced two shocks, while 5 percent have experienced three shocks – higher than the same figures for households that are not poor (9 percent and 3 percent respectively). This is important, since according to the World Bank (2000) the cumulation of different shocks is a source of significant stress for households. Consumption smoothing is more difficult with repeated shocks, as households may have depleted their assets in coping with the initial shock, making it even more challenging to cope with subsequent shocks. In addition, significantly more of the poor and the ultra-poor when compared with the non-poor and the non-ultra-poor respectively, experience the interaction of shocks.

COPING STRATEGIES USED IN RESPONSE TO SHOCKS

Just over half (51 percent) of households that experienced one or more shocks did not report a making a planned response to these shocks in any way. However, of those households that experienced at least one shock, and did respond, over two thirds (69 percent) used an economic response to at least one shock. These households either sold their assets or used their savings, borrowed money from a moneylender or a stokvel, or used insurance. Half of all households that responded to a shock drew on their social capital and used the help of others as a strategy to cope with the shock. Only three percent of those households that responded to a shock noted that they had removed one or more of their children from school, which from the level of the household would appear to be a coping response that is extremely infrequently used. From the outset this would seem to indicate that adolescents are not frequently withdrawn from school as a result of shocks.

Table III: Likelihood of using coping responses among various households

Shocks and responses	Non-Poor	Poor	p	Non-Ultra-Poor	Ultra-Poor	p
<i>Economic response</i>						
Demographic	70.1	68.0	0.652	42.3	39.5	0.548
Economic	47.8	65.5	0.004**	28.2	37.9	0.107
Asset-Livelihood	66.7	61.6	0.653	38.1	31.1	0.521
<i>Social capital response</i>						
Demographic	64.5	75.9	0.003**	38.6	49.5	0.010
Economic	46.9	69.5	0.000**	22.5	46.2	0.000
Asset-Livelihood	43.9	78.3	0.000**	29.3	50.8	0.017
<i>Child out of school response</i>						
Demographic	65.8	93.3	0.026*	39.4	66.7	0.034
Economic	52.2	93.8	0.001**	26.8	75.0	0.000
Asset-Livelihood	50.0	100.0	0.011*	29.1	85.7	0.002

* p <= 0.05 ** p <= 0.01

Both the poor and the ultra-poor were more likely than the non-poor to not respond to a shock that they encountered. However, when responses were given, both the poor and the ultra-poor were more likely than the non-poor to use the help of others to respond to all types of shocks. This can be seen in table three, which shows the likelihood of each type of response to separate shocks, among poorer and non-poor households. It would therefore seem that social capital is well accessible to the poor, despite claims of continuing social fragmentation in urban areas (Moser 1998). Further, taking children out of school in response to a shock was more likely to occur in poor households than in non-poor households, although caution should be attached to this finding due to the small number of households that used this response to shocks. Interestingly, in 10 of the 12 households that removed one or more of their children from school, this was in response to the loss of a job in the household. Further, it is noteworthy that almost all of the households that used this response were poor. Neither poorer households nor those households that are not poor were more likely to use an economic response, although the poor were more likely than the non-poor to use an economic response to an economic shock.

SCHOOL DISRUPTION

The type of analysis conducted at the household level is not entirely satisfactory for the purposes of investigating whether adolescents leave school as part of a household coping strategy, as information gleaned at

a household level about an issue that occurs at the individual level might not be accurate. Understanding these issues from the perspective of the adolescent who experiences them may prove to be more instructive. In the following sections the focus will shift to the adolescent level, and the issue will be looked at in terms of school disruption episodes. Two definitions of school disruption will be used, namely ‘dropping out of school’ and ‘dropping behind in school’.

In the Transitions study the full educational history for each adolescent was recorded in a calendar format. Each respondent was asked to state the grade he or she was attending at each age. In the calendar all full years of education were noted, as well as repeated grades, full and partial years of school absence, and reason for any interruption. Since the household respondent was required to state whether any shocks had occurred within the 24 months prior to the date of the interview, it was necessary to define dropping out or dropping behind as having occurred within this same period, in order to enable shock and disruption information to be linked. While these time periods do not match perfectly, there is sufficient overlap in time to enable a certain level of confidence when working with these variables. A further 452 adolescents who had completed grade 12 at the start of this time period were excluded from this analysis. A school disruption episode was registered if during the current year and/or during the two calendar years preceding the survey the adolescent either reported that they had not completed a grade, or that they had left school after completing the year of schooling without having completed grade 12, or that they had repeated one or more grades, or a combination of these possibilities.

DROPPING OUT OF SCHOOL

Schooling in South Africa is free until age 16, and while there are school fees, non-payment should not result in a child being excluded from school. Completing grade 12 is regarded as an important achievement, the lack of which jeopardises future economic and human development. Some of the adolescent respondents in this study who did not complete grade 12 may return to school, although this is not likely since more than 70 percent of school leavers in the survey were age 18 or older and may therefore consider themselves beyond secondary school age (Rutenberg *et al* 2000). An adolescent school drop-out was defined as being in one of grades one to twelve at the start of the period under review, and left school at some stage during this time. Adolescents defined as not having dropped out of school either repeated a grade and were included in the second definition of

disruption, or experienced a continuous progression from grade to grade without a disruption episode. Adolescents who, for example, completed grade 10 and then moved on to complete a diploma, without returning to school, were defined as not having experienced a disruption episode, as this movement is regarded as having arisen from the adolescent's choice of education.

Sixteen percent of this sub-sample has dropped out of school. Girls are more likely than boys to experience a drop-out episode, with 18 percent of females as opposed to 14 percent of males having dropped out of school during this period. Moreover, 19 percent of Africans, as opposed to 9 percent of coloureds, 9 percent of Indians and 8 percent of whites have dropped out of school during this time. As expected, the average age of those who dropped out is higher (18.4 years) than those who had not (16.7 years). There is also an urban-rural dimension to this phenomenon, and the difference is significant. Fourteen percent of adolescents in urban areas have experienced a school drop-out episode, while the figure is higher in rural areas, at 21 percent.

An assessment of reasons given for leaving school before matriculating reveals a number of gender differences. Reflective of the relatively high level of fertility among African women who have never been married and those under the age of 30, as noted by Chimere-Dan (1997), and the high incidence of unplanned pregnancies among Zulu schoolgirls living in and around Durban which Craig and Richter-Strydom (1983) note, just over a third (38 percent) of females in this sample left school because they fell pregnant. Conversely, 18 percent of males, as opposed to two percent of females, reported that they left school because they needed to work, and nine percent of males expressed no interest in attending school as opposed to three percent of females. This is in line with Tanner, Krahn and Hartnagel's (1995) argument that males are more likely to leave school for work related reasons, because they find earning more money and attaining adult status attractive. While there is a sex difference in leaving school to perform domestic duties, it is much smaller than the poverty-based theory of disruption would suggest – only three percent of females reported that they left school for this purpose compared with one percent of males. Overall, however, the cost of school fees was reported as being the most central reason for leaving school before matriculating among both sexes, with 27 percent of males and 30 percent of females leaving for this reason. This ties in with findings in the SA-PPA (May *et al* 1998: 58) that identify the costs of education as being a significant barrier in accessing education. This finding is also

underscored by a national survey of 15 to 30 year olds who had left school earlier than they would have liked, which showed that 57 percent of young men and 46 percent of young women claimed that they had been forced to abandon their education for financial reasons (May 1998: 101). Sogaula *et al* (2002) too show this to be an area of increasing concern, with 54 percent of children in their study having stopped schooling, and ascribing the reason to a lack money to pay for school fees and uniforms. It is noted that families in the study were not able to sustain expenditure beyond that required for food items and that requirements for additional expenditure on annual school fees and uniform costs comes at a considerable social cost and adds to existing household poverty.

In order to understand more clearly why some adolescents experience drop-out episodes, a number of adolescent characteristics have been investigated. An attempt has been made to assess if there was a difference in the responses that adolescent drop-outs gave, compared to those given by adolescents that did not experience such an episode. Adolescent respondents were asked which of the presented problems in schools applied to their school. As can be seen in table four, those adolescents that experienced a drop-out episode are more likely to agree that in their school teachers were drunk, teachers were threatened by students, and security was bad. With regard to connectedness, adolescent drop-outs are more likely than non-drop-outs to agree with 'negative' comments (such as 'a lot of crime in my neighbourhood/community'), and less likely to agree with 'positive' comments (such as 'I have many friends at this school'). Sexual harassment is also more likely to be noted as a problem at school among those who experience a drop-out spell than adolescents who do not. As other researchers have found, an environment of harassment or sexual coercion appears to be associated with low performance and drop-out (Mensch and Lloyd 1997, cited in Maharaj, Kaufman and Richter 2000). Interestingly, adolescents that had experienced a drop-out episode are more likely than those who had not experienced such an episode to know someone with HIV/AIDS, and to know or think they know anyone who has died of HIV/AIDS. Respondents were asked about their participation in work activities. As the drop-out literature would indicate, those who experienced an episode of school drop-out are more likely to have worked and to have looked for work than their counterparts, and this group spends on average more hours and more months doing work than non-drop-outs.

Table IV: School, community and work characteristics of adolescents who drop out

Characteristics	Drop-out	No Drop-out	p
<i>Problems in school</i>			
Teachers drunk	17	7.8	0.000**
Teachers threatened	27.9	21.1	0.011*
Bad security	28.7	23	0.038*
<i>Connectedness in school</i>			
Many friends at this school	61.2	75.4	0.000**
Teachers care about students	89.2	93.1	0.021*
Sexual harassment a problem	12.2	17.4	0.018*
<i>Connectedness in neighbourhood/community</i>			
Many friends	53.2	67.8	0.000**
Adults help other families in trouble	73.6	80.6	0.001**
A lot of crime	43.9	35.5	0.001**
A lot of violence among youth	25	18.4	0.002**
Happier if lived in another	48.5	39.4	0.001**
People trust one another	56.9	65.1	0.001**
<i>HIV/AIDS</i>			
Know anyone with	21.6	16	0.024*
Know anyone who has died of	19.9	15.2	0.005**
<i>Work</i>			
Ever worked for cash	31.8	18.8	0.000**
Worked in last 12 months	75	65.4	0.048*
Mean months spent doing this work	5.5	4.5	-
Mean hours spent doing this work	37.6	25.2	-
Spent time looking for work	27.6	12.4	0.000**
Looking for work last 12 months	81.9	72.1	0.041*

* p <= 0.05

** p <= 0.01

As can be seen from table five, more of the poor and the ultra-poor than the non-poor have experienced a drop-out episode during this two year period, and they are more likely to do so than those that are not poor. Moreover, almost half (48 percent) of those that have dropped out of school as opposed to 42 percent of those that have not, come from households that have experienced one or more shocks during the two year period, and the difference between these two groups is significant. Therefore adolescents that experience spells of drop-out are more likely to come from a poor household and from one that has experienced a household shock.

Table V: Likelihood of school drop-out among adolescents from poor and non-poor households

Household type	% Drop-out	Pearson Chi-Sq.	p
Poor	20.8	61.4	0.000**
Non-Poor	8.9		
Ultra-poor	23.4	53.1	0.000**
Non Ultra-poor	12.2		

* p <= 0.05

** p <= 0.01

Davies (1993) notes that if coping strategies are a good indicator of unusual stress, they are used when circumstances demand, and then abandoned once recovery is underway. Further, the relative priority that households give to current consumption and generating income in the future may shift at different points in the household coping strategy (Corbett 1988). Changes in coping that occur at a household level may impact upon adolescent school attendance and enrolment, and adolescents who have left school may return again. Indeed, some of the adolescents defined in this paper as having dropped out of school may return to school in the future. While no prediction can be made in this paper about what the adolescents may do after the study interview, those adolescent drop-outs who return to school during the time period within which ‘disruption’ has been defined have been included in the analysis in order to determine the proportion of pregnant drop-outs who eventually return to school.

An analysis of the 1996 Census shows that in every age group (12 to 15 years, 16 to 25 years, and 26 years and over) women who have given birth are less likely to be studying than those who have not had children (Stats SA 2001). Further, Maharaj, Kaufman and Richter (2000) note that 43 percent of African girls in South Africa have been pregnant at least once by age 19, and that for African girls under 19, about a third of those who have had at least one birth are also attending school. These authors use this finding to conclude that education continues to play an important role for girls, even after the birth of a child at a young age. Since only the first wave of data has been analysed in this paper, it has not been possible to establish here which of the female adolescent drop-outs will return to school after the survey has been undertaken. However, of the 39 female adolescents who leave school at some stage during the period under review, only two were found to have returned to school by the end of this period. Since this group of pregnant girls is small, and the time frame within which the analysis

was carried out was short, it is not possible to draw comparable conclusions about these findings. While the focus of this paper is not on returning to school, an area for future research using the second wave of data and possible future rounds of data collected for the Transitions study could be to ascertain what enables some adolescents who experience a drop-out episode to return to school.

DROPPING BEHIND IN SCHOOL

Instead of dropping out of school, some adolescents may experience a different disruption episode that is dropping behind in school, and having to repeat one or more grades. This may be symptomatic of stresses and pressures being experienced by the adolescent, many of which may be rooted in household level events, and this definition of disruption is therefore important when considering the impact of shocks on adolescent schooling. When looking at this sub-sample of adolescents, it is evident that a substantial portion (62 percent) have repeated one or more grades during the two year period under review, with no significant difference between females and males.

This is contrary to findings in some grade retention studies (Karweit 1999), which show that males are more likely than females to drop behind. In considering the impact of pregnancy on grade attainment and grade enrolment, it is evident that thirty-seven percent of girls who dropped behind are currently pregnant or have been pregnant at some stage. Fifty-nine percent of those who have 'ever been pregnant' have not dropped behind during the reference period and 41 percent of those 'ever pregnant' have not dropped out of school during this time. In addition, those at younger ages were more likely to repeat than those in the older age groups. Over two thirds (69 percent) of 14 to 16 year olds repeated a grade, 58 percent of 17 to 19 year olds did so, and just under half (48 percent) of 20 to 22 year olds were retained in a grade. Further, in contrast to what is demonstrated with regard to dropping out, dropping behind is not isolated to Africans. Just under two thirds (65 percent) of Africans were found to have dropped behind, as well as 59 percent of coloureds, 49 percent of Indians and 57 percent of whites. In addition, more adolescents in rural areas (66 percent) than in urban areas (59 percent) repeated a grade during this two-year period, again in line with the grade retention literature.

Table VI: School, community and work characteristics of adolescents who drop behind

Characteristics	Repeat	No Repeat	p
<i>Connectedness in school</i>			
Many friends at this school	71.9	77.7	0.003**
Happier if attended other school	37.4	31.2	0.003**
Connectedness in neighbourhood/community			
Happier if lived in another n/c	42.5	38.3	0.039*
<i>Work</i>			
Ever worked for cash	15.8	29.2	0.000**
Worked in last 12 months	59.2	75.2	0.000**
Mean months spent doing this work	5	4.3	-
Mean hours spent doing this work	32.9	22.4	-
Spent time looking for work	9.5	23.6	0.000**
Looking for work last 12 months	69.3	78.8	0.037*

* p <= 0.05

** p <= 0.01

As can be seen from table six, those who drop behind displayed less ‘connectedness’ than those who did not, both at school and in the neighbourhood/community in which they live. Interestingly, these adolescents were less likely than those who did not drop behind, to have worked or to have spent time looking for work, and spent less time on average doing work than their counterparts.

Table VII: Likelihood of school grade repetition among adolescents from poor and non-poor households

Household type	% Drop-out	Pearson Chi-Sq.	p
Poor	65.1	16.545	0.000**
Non-Poor	57		
Ultra-poor	65.2	6.223	0.013*
Non-Ultra-poor	60.2		

* p <= 0.05

** p <= 0.01

Table VIII: All shocks included, all variables endogenous to shocks excluded

Maximum likelihood logit estimation model (n=2348)
Dependent variable: adolescent school drop-out episode
Prob > Chi2 = 0.000
Log likelihood = -956.244
Pseudo R2 = 0.127

Adolescent / household characteristics	Odds Ratio	Std. Err.	z	p	95% Confidence Interval	
Adolescent characteristics						
Female (Male)	1.723	0.346	2.710	0.008**	1.158	2.563
17-19 years (14-16 years)	3.603	0.493	9.370	0.000**	2.748	4.724
20-22 years (14-16 years)	7.974	1.299	12.740	0.000**	5.775	11.011
Coloured (Black)	1.193	0.887	0.240	0.813	0.273	5.206
Indian (Black)	0.927	0.293	-0.240	0.811	0.495	1.735
White (Black)	1.040	0.444	0.090	0.927	0.446	2.423
Household head characteristics						
Female (Male)	0.945	0.111	-0.480	0.631	0.749	1.192
Age	0.999	0.005	-0.210	0.834	0.989	1.009
Household member characteristics						
Adult male present	0.996	0.171	-0.020	0.982	0.710	1.398
Homestead characteristics						
Number of rooms	0.906	0.023	-3.840	0.000**	0.861	0.953
Own home	0.858	0.154	-0.850	0.397	0.602	1.225
Flush toilet	0.405	0.106	-3.470	0.001**	0.242	0.678
Electricity	0.853	0.212	-0.640	0.523	0.521	1.396
Piped internal water	1.804	0.410	2.590	0.011*	1.150	2.830
Telephone	0.597	0.109	-2.840	0.005**	0.416	0.856

** p <= 0.01 * p <= 0.05

Note: Reference category for each group indicated in parentheses where necessary

Table seven indicates that as with those that drop-out, adolescents who dropped behind were more likely to come from poor households and from ultra-poor households than from non-poor households. However, adolescent ‘repeaters’ were not more likely to come from households that had experienced one or more shocks during the two year period. Sixty-three percent of adolescents from shock households repeated a grade, while 61 percent of adolescents from households in which no shock had occurred did so. Therefore while poverty seems to be associated with grade repetition, unlike those that drop-out of school, shocks do not. Finally, it is not possible to work out the percentage of those who drop behind who later drop out since drop-out and repetition data is defined within a two-year reference period.

MULTIVARIATE ANALYSES

The descriptive analysis presented so far suggests that school disruption, defined as dropping out or dropping behind, is associated with household poverty as well as the quality of the schools that adolescents attend. While few households reported the removal of adolescents from school as a coping strategy in response to a shock, significantly more drop-outs came from households that had experienced a shock. In contrast, dropping behind was not associated with household shocks. Adolescent pregnancy emerges as an important influence, with 13 percent of girls in the reference period currently pregnant and 46 percent stating that they have 'ever been pregnant'. Just under two-thirds (59 percent) of 'ever pregnant' girls have experienced a drop-out episode during the reference period, and 41 percent repeated at least one grade. Among those who have never been pregnant, 24 percent have experienced a drop-out episode and 60 percent have repeated a grade. Therefore those who are pregnant are far more likely to drop-out than those that have not been pregnant, while more of the latter group has repeated a grade.

However, descriptive statistics are not sufficient to reveal causality, and there are many reasons to expect that unobserved factors may mediate this apparent relationship. Two survey logistic regression models for each type of disruption episode were constructed - one type of model that includes shocks as predictors and excludes variables endogenous to shocks, and another type that excludes shocks and includes these endogenous variables. Variables that are endogenous to demographic shocks may be affected by a change in the number of household members or by a change in health status, such as an illness period in the household. Examples of the former include the size of the household, the number of children in the household, the average age of the household, the proportion of the household educated to grade 10 and the proportion of the household employed. The employment of the household head, a pension or other government grant, or per capita poor are all variables that are endogenous to economic shocks: these variables may be affected by a change in household income. The models were weighted by sampling weights and the cluster identifier variable was the enumeration area. The adjusted Wald F test was used after running survey logistic regression models with and without groups of variables to determine whether or not variables were significant as a group. A maximum likelihood logit estimation specifying the enumeration area as the cluster identifier variable was

run after the final model had been ascertained, in order to obtain the overall model fit statistics.

In all models that were run, an ‘education of mother’ variable was included. Elsewhere, mother’s education has been found to be important in affecting adolescent pregnancy and also the educational attainment of children. Women’s income has also been found to impact upon child nutritional status and general well-being (Schultz 1993). The mother’s education level could therefore impact on this study in three ways. However, eventually this variable was excluded from all models as information was only available for those adolescents whose mothers’ lived in the same household. Information on this variable was missing for 34 percent of adolescents. In all models that included shocks and excluded variables that are endogenous to shocks, shocks and shock interaction variables are both unimportant and not significant, both individually and when tested jointly, and have therefore been excluded from these models. In the first model with a school drop-out episode as the dependent variable, in which shocks are included and variables that are endogenous to shocks are excluded, school and community variables, proportion of household educated, employment of household head, number of children in the household, illness period in the household, traditional house, shack and electricity are all not significant and not important. Joint significance was also tested for, but none of the combinations of variables were shown to be significant together. In the final model seen in table eight, it is clear that there is a 72 percent increase in the likelihood of females experiencing a drop-out episode over males, while adolescents aged 17 to 19 years are over three times more likely to experience a spell of drop-out when compared with 14 to 16 year olds, and 20 to 22 year olds are almost eight times as likely to encounter a drop-out episode than this younger age group. It is also evident from the model that adolescents that live in households that have more rooms are less likely to experience a drop-out episode, while adolescents in households that have a flush toilet and a telephone are also more likely to drop-out. The finding that adolescents in households that have piped internal water are more likely to drop-out is more difficult to explain. However, similar analyses conducted in the South African context confirm that water-related variables are exceedingly difficult to understand in relation to poverty (Clark 2002). In all, the model shows a number of poverty related indicators to be significant in predicting adolescent school drop-out episodes, although the odds ratios for these variables do not seem to be high. Overall the model explains just 13 percent of the variance in the outcome variable. Since both the data and the

literature point to an association between grade repetition and school drop-out, it would seem obvious to include grade repetition as a predictor variable. However, due to the limited time period under investigation, and considering the fact that an adolescent who is repeating will not have dropped out of school, it is not possible to do so. The grade repetition variable should ideally be included in models such as these when more years of data are available.

Table IX: All shocks excluded, all variables endogenous to shocks included

Maximum likelihood logit estimation model (n=2484)
Dependent variable: adolescent school drop-out episode
Log likelihood = -955.414
Pseudo R2 = 0.134

Adolescent / household characteristics	Odds Ratio	Std. Err.	z	p	95% Confidence Interval	
Adolescent characteristics						
Female (Male)	1.620	0.340	2.300	0.023*	1.069	2.456
17-19 years (14-16 years)	3.723	0.468	10.460	0.000**	2.903	4.775
20-22 years (14-16 years)	7.973	1.203	13.760	0.000**	5.914	10.749
Coloured (Black)	1.314	0.833	0.430	0.668	0.374	4.614
Indian (Black)	1.285	0.393	0.820	0.414	0.701	2.356
White (Black)	1.347	0.629	0.640	0.525	0.534	3.396
Household member characteristics						
Average age	1.016	0.010	1.630	0.105	0.997	1.035
Proportion educated (1st quantile)						
2 nd quartile	0.695	0.226	-1.120	0.266	0.365	1.325
3 rd quartile	0.622	0.150	-1.970	0.051	0.386	1.001
4 th quartile	0.465	0.150	-2.370	0.019*	0.246	0.881
Homestead characteristics						
Number of rooms	0.913	0.023	-3.590	0.000**	0.868	0.960
Own home	0.883	0.156	-0.710	0.482	0.622	1.253
Flush toilet	0.509	0.102	-3.360	0.001**	0.341	0.758
Piped internal water	1.948	0.453	2.870	0.005**	1.229	3.087
Telephone	0.688	0.135	-1.900	0.060	0.466	1.016
Income / expenditure						
Per capita poor	2.193	0.432	3.990	0.000**	1.485	3.239

** p <= 0.01 * p <= 0.05

Note: Reference category for each group indicated in parentheses where necessary

The second 'drop-out' model which excludes shocks and includes variables that are endogenous to shocks, seen in table IX, also explains 13 percent of the variance in the outcome variable. Again school and

community variables, proportion of the household employed, household head characteristics (age, sex and employment), number of children, presence of an adult male, illness period, traditional house, shack and electricity are all not individually significant and odds ratio's of almost one indicate that they are also unimportant. In various combinations, these variables are also not jointly significant, and have therefore been excluded from the model. It can be seen again that being female as opposed to being male, and being in the older age groups relative to being in the 14 to 16 year age group means that an adolescent is more likely to drop-out than if this were not the case. In addition, if the fourth quartile of the household is educated to grade ten, an adolescent within this household is less likely to experience a drop-out episode. The same homestead characteristics significant in the first drop-out model are significant here too. Perhaps of most importance is the finding that adolescents within per capita poor households are more likely to experience a drop-out episode than if this were not the case. Therefore, the poverty-based theory of drop-out seems to account in part for the incidence of drop-out.

If the 'drop-out' models are run separately for girls and boys, the strength increases for the 'girl only' models and decreases for the 'boys only' models, while the predictors remain relatively consistent, although a number of interesting findings now emerge. In both the 'boys only' and 'girls only' models those adolescents in the second and third age categories are more likely to experience a drop-out episode than younger adolescents. Further, those in households with flush toilets are less likely to drop-out of school, and those in households with piped internal water are more likely to experience such a disruption episode. Interestingly, white boys are more likely than Africans to drop-out, while those that live in households with less rooms and those who experience problems at school are more likely to drop-out. The latter finding would seem to point to boys being more affected by bad environments, which increase their risk of dropping out. Moreover, in the 'boys only' model that excludes shocks and includes variables endogenous to shocks, boys in households that have experienced a period of illness of a household member, are more likely to experience a drop-out episode, and those in households in which the third and fourth quartiles of the household are educated are less likely to experience a drop-out episode. In the models run for only girls it is clear that white girls are less likely to drop-out of school than African adolescents. Further, in the model that excludes shocks, those female adolescents in households that are per capita poor are more likely to drop-out. Therefore, while formally defined shock variables still do not

feature as predictors of drop-out, boys are more likely to drop-out if a household member has experienced an illness period during the last three months. In addition, being poor is a predictor of drop-out among girls.

The two types of models were also run with grade repetition as the dependent variable, and joint significance was tested for. Yet the pseudo R-squared values in both models were found to be very low, at approximately four percent. As noted earlier, this is most likely attributable to the way in which the ‘grade repetition’ variable has been defined, which does not make it suitable for assessing causality. In both models, those adolescents in older age groups are less likely to repeat a grade than adolescents aged 14 to 16, and in both models Indian adolescents are less likely than Africans to repeat a grade. In the model that includes shocks and excludes variables endogenous to shocks, white adolescents too are less likely to repeat a grade in relation to African adolescents. The model also seems to show that adolescents in households with more rooms are more likely to repeat a grade, and that adolescents who live in shacks are less likely to repeat a grade – both findings for which an explanation is difficult to determine. In the second grade repetition model, which excludes shocks and includes variables endogenous to shocks, those adolescents in per capita poor households are more likely to repeat a grade. However, the model also shows that adolescents in households with more children and those that live in shacks, are less likely to repeat a grade than if this is not the case – both findings which beg an explanation. Contrary to the other models, adolescents in households with piped internal water are less likely to repeat a grade. Adolescent level findings evidenced in these school grade repetition models would seem to confirm findings in the grade retention literature. But while these models seem to give some indication that socio-economic status may play a role in adolescent grade repetition, findings in this regard seem to be inconsistent, and in all instances the impacts of significant predictors are modest. Logistic regression models that predict an adolescent drop-out episode seem to account for more of the variance in the outcome variables, and show relatively convincingly that certain adolescent and homestead characteristics, including being poor, predict adolescent school drop-out episodes.

Finally, two models were also run using as a dependent variable, whether an adolescent had experienced both a grade repetition episode and a drop-out episode in the reference period. In both types of models adolescents that fell in the two older age groups were more likely to

experience both types of disruption episodes than those adolescents aged 14 to 16 years. Those living in traditional houses and those living in houses with piped internal water were also more likely to encounter school disruption. In the model that excluded shocks and included those predictors endogenous to shocks, adolescents in per capita poor households were shown to be more likely to experience both types of disruption episode than those in non-poor households. Finally, adolescents in households in which the fourth quartile of the household were employed were less likely to experience a disruption in their schooling than those in which the first quartile of the household only were employed.

CONCLUSION

For the most part, the data collected in the Transitions to Adulthood study suggest that adolescents that come from poor households are more likely to experience school disruption episodes than those from non-poor households. Girls are far more vulnerable to drop-out episodes, and poverty predicts drop-out among girls. In contrast, boys that experience problems in the school environment and those that come from households in which a household member experiences an illness period, are more likely to experience a school drop-out episode. Apart from this alternate shock indicator, none of the formally defined shock variables or shock interaction variables are predictive of school disruption, although adolescent pregnancy was not treated as a shock and perhaps should be seen as such. The data appears to show that poor households do not resort to removing children from school as a coping strategy and that shocks are not associated with a higher probability of school disruption. Instead, the findings in this study confirm narratives from the SA-PPA that poor households attempt to defend the future of their children as their most important asset and their pathway out of poverty. These findings are also supported by a recent study by Sogaula *et al* (2002) in the Mount Frere district of the Eastern Cape. These poor households appear to make every attempt to see that their children remain in school despite the difficult circumstances that shocks bring about. Yet even poor adolescents that may still be in school face enormous challenges at home in an environment of vulnerability and coping responses, which is likely to compromise their ability to function to their full potential at school. How then is it possible to support these poor households in their efforts to ensure that their children remain in and progress through school, and in so doing ensure that human capital is developed, in order for these adolescents and households to move out of poverty in the future?

Haddad and Zeller (1997) indicate that there is widespread consensus on the importance of social welfare programmes and safety nets as an essential component of a public policy strategy for the reduction of poverty. Among the policy measures recommended by the PIR to reduce poverty and inequality in South Africa, are protective measures that provide relief from deprivation. In the PIR it is noted that more targeted measures are required if the benefits accruing to the poor are to be increased, and that specific targeted interventions may be required to deal with particular social or geographic dimensions of poverty in South Africa. Further, it is recommended that poor families be assisted by programmes in human development and infrastructure service delivery that augment their assets, expand their existing coping or household management strategies, or facilitate new opportunities (May 1998). This approach is in line with Moser's (1996) emphasis on the importance of ensuring that interventions complement and strengthen, rather than substitute for people's own initiatives.

Although providing school-based support seems an obvious option, the experience in South Africa has not been promising. One of the lead projects announced at the opening of the first democratic parliament in South Africa was the 'Primary School Nutrition Project' (PSNP). With an original budget allocation of R496 million, this programme had multiple objectives including enhancing learning capacity, school attendance and nutritional education. However the programme was widely criticised for its expedient introduction without clear planning, and while the project has been considered a success in some provinces, it has widely been criticised for corruption, mismanagement, lack of capacity and difficulties at the delivery level (Saasa-Modise 1997; Kallaway 1996). Indeed, much of the evaluation of the PSNP focused on implementation problems, and often on perceptions concerning the quality of food and administrative problems. Yet there is general agreement that – where properly implemented – the programme did provide an essential social service, which is evidenced in lowered absenteeism, increased exam pass rates, and a marked difference in illness rates (Edmunds 1997; Smith 1997; Sidley and Amner 1995).

As noted, the data in this paper has shown that despite their vulnerability to shocks, poor households strive to keep adolescents at school. Education clearly matters to the poor. The direct- and opportunity costs involved in keeping these children at school are difficult to estimate, but must involve trade-offs in other dimensions as resources are directed towards supporting children. It is necessary to

attempt to ascertain what options there are for targeting support to those children and households in need of it. There has been little investigation of the options with regard to forms of targeting other than social assistance grants in South Africa. The implementation of an income grant linked to a school incentive scheme that targets adolescents is one option for consideration in South Africa. This would have both short-run benefits to the poor in terms of the income that is received, as well as a long-term impact in terms of the development of human capital. Such a strategy would also provide a way for the state to engage in the provision of a workable means of direct income redistribution. In addition, such grants may assist the return to school of the substantial numbers of adolescent girls who have experienced a pregnancy, but who appear not to have continued with their education despite the absence of regulations that would prevent this. It would also enable those children unable to attend school due to the cost of fees or additional schooling expenses to attend school.

Experience elsewhere suggests that such incentive based income grants potentially have a number of benefits including that drop-out rates are reduced, progression through grades is advanced, and reliance on child labour is reduced (Behrman *et al* 2001; Sawada and Lokshin 2000; Ravallion and Wodon 1999). Further second order benefits may result from delayed pregnancy or sexual activity and lower risk to HIV/AIDS. Such grants may also provide adolescent mothers with an income source, allowing them to return to school and complete their education. The potential long term benefits for economic growth from increased human capital are an additional advantage while a ‘crowding out’ of investment that is then diverted for consumption purposes seems improbable given the effort made by poor households to keep children at school. Instead, such support seems more likely to release resources for productive purposes, or reduce the need to make sacrifices in other dimensions of household well-being.

There are various options for implementing such an income grant in the South African context. It has recently been announced that the Child Support Grant, the government’s central grant for poor children, will be extended to include children aged 14. Child support campaigners have been lobbying for support for all children, defined in the Constitution as younger than 18. The grant could be pegged at school-going children who are older than 14 to provide support to these children. Alternately, some type of geographical targeting could be considered. Children of all ages in the poorest areas of the country, where the vast majority of children are living in poor circumstances, could be provided with this

type of support. The Limpopo, Eastern Cape and KwaZulu-Natal provinces are obvious candidates for this form of targeting that is already occurring in other aspects of government and donor assistance. However, attention needs to be paid to reducing unnecessary administrative requirements which is likely to result in slow take-up of such a grant. Recent media and related government attention has focused on the difficulty experienced by many, particularly those in remote rural areas, in applying for and obtaining social assistance grants. In the most frequently cited case, Chopra *et al* (2002) have shown in a malnutrition study, that as a result of barriers to accessing the grant, only one of 30 extremely poor children was in receipt of a Child Support Grant, although all were eligible for the grant. These obstacles to receiving the grant included lack of birth certificates and identity documents, and not being able to afford transport to get to the relevant government departments to apply for the grant. In the light of such findings the argument for a universal social assistance grant, provided for all citizens without means testing, does seem attractive. Yet despite the endorsement of such a scheme by the Commission of Inquiry into a Comprehensive Social Security System in South Africa, national government has to date shown every indication of being against such a universal option. Widespread popular lobbying has been countered by arguments for incremental and targeted social security interventions to extend reach and cover gaps (see van der Berg and Bredenkamp, 2002, for example). While the deliberation continues, this article serves to put forward for consideration a further targeted option for a specific group. At the least, there is a need for a more systematic assessment of the options for school-based incentives in South Africa.

Yet the importance of striving for quality of schooling as a fundamental first step needs to be emphasised as the underlying intervention before offering grants intended to help poor families in their efforts to educate their children. The African population of South Africa has historically been deprived of educational opportunities, and it has been shown that Africans in KwaZulu-Natal display educational attainments lower than those of the country as a whole (HEARD 2001; Maharaj, Kaufman and Richter 2000). In a report on children and poverty commissioned by the Reconstruction and Development Programme (RDP), the backlog in African educational achievement is noted as being due in part to the poor quality of schools for Africans, particularly poor planning and a lack of resources (RDP 1996). Case and Yogo (1999) find that the quality of schools in a respondent's magisterial district of origin had a large and significant effect on the rate of return to schooling for African men. These authors also find that school quality significantly

affects educational attainment and the probability of employment. Some findings on school quality have been documented in this paper, and in some instances unfavourable school environments are shown to be associated with children leaving school. Clearly, a policy prescription that focuses on keeping children in school is of little value if the learning environment fails to contribute to successful human capital acquisition. The RDP (1996) reiterate that priorities should shift from measures to keep children in school to measures that ensure that they benefit from being there. Therefore, the provision of quality schooling would appear to be the first policy area that needs to be addressed, with attention paid to specific supply characteristics including quality of infrastructure, learner/educator ratios, availability of textbooks and educational resources, family constraints and community resources.

Finally, there is a clear need for future research and policy consideration to focus on school fees and other school costs, which are increasingly being reported as significant barriers to schooling. Why are the cost of school fees playing a substantial role in children leaving school before they have completed grade 12, when one of the explicit policy decisions by the new government has been free education for all? The policy stance of school governing bodies in this regard could prove a useful starting point for future research. The eradication of school fees and the provision of some form of school uniform grant are policy options suggested by some (Sogaula *et al* 2002), and the importance of such interventions should be underscored.

ENDNOTES

1. The racial classification used by Stats SA (2000) has been adopted for this paper.

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