Unexplored Elements of Adolescence in the Developing World

Adolescence entails changes, some of them drastic, in young people’s bodies, emotions, capabilities, ways of thinking, and financial situations. Particularly for girls in the developing world, this period often fails to bring opportunities for increased autonomy. The circumstances of young people’s lives, as well as young people’s ability to meet and address the challenges they encounter as they become adults, have a direct impact on their future and the futures of their children and their country. The largest-ever generation of young people aged 10–24 is now making the transition from childhood to adulthood. One and a half billion of them—86 percent—live in developing countries.

To provide a foundation of information on the lives of these young people, the U.S. National Academies published Growing Up Global: The Changing Transitions to Adulthood in Developing Countries in May 2005. The volume detailed the findings of an expert panel—led by Cynthia B. Lloyd, Population Council director of social science research—on transitions to adulthood in developing countries. As part of its three-year information-gathering process, the panel commissioned background papers to provide more focused treatment of certain issues where existing literature was lacking. These papers informed the initial publication.

Ten of these background papers were selected by the editors for publication in a companion volume, The Changing Transitions to Adulthood in Developing Countries: Selected Studies, which was published in December 2005. Some of the most important contributions of the volume are its essays on adolescents in China and on adolescent marriage. China has not participated in the Demographic and Health Surveys (DHS) program—a major source of comparative data for the panel report—and other data from China were not accessible to the panel. These circumstances made this contribution particularly critical. And, while marriage as an institution has been studied, its specific effects on adolescents have garnered little attention.

Adolescents in China

Emily Hannum of the University of Pennsylvania and Jihong Liu of the Harvard School of Public Health consider the case of adolescents in China, the most populous country in the world. The authors draw on a variety of information sources, including reports, policy documents, surveys, and census data from the Chinese government and the U.S. Census Bureau’s International Data Base. China currently accounts for more than 20 percent of young people in the developing world, and is also one of the countries in which economic development and transformation have been occurring most rapidly in recent decades. The authors find that, on average, this market-reform period has benefited the lives of many adolescents. Schooling has increased, and adolescent labor has decreased. The average age at marriage rose in the 1990s—with the vast majority of males and females getting married after age 20—and is high for the developing world. Thus, marriage is unlikely to compete directly with educational opportunities except at the very highest levels of education. Low fertility rates suggest that women’s childrearing responsibilities in China may compete less with other opportunities than in many other developing countries.

Although many of the benefits of improved standards of living have been shared across social groups, social and economic inequalities are becoming more accentuated. Wealthier urban youth are beginning to experience problems with overeating, while some rural youth still face malnutrition. Suicide rates are dramatically higher among rural adolescents and young adults—especially young rural women—than among urban youth. Wealthier adolescents and those in urban areas are more likely to attend school than their poorer rural counterparts. Finally, social changes in the reform period raise important concerns about behavioral health issues, especially smoking and sexual health. AIDS has the potential to become a staggering social problem in China if not successfully addressed in the near future.

Adolescent marriage

According to human rights and reproductive health advocates who have put “child mar-
Low Morale Found Among South African Nurses

The emigration of trained professionals poses an ongoing challenge in South Africa. Among nurses, this phenomenon—and the pressure it places on nurses who remain—may be contributing to a high rate of maternal mortality in that country. The Population Council’s Frontiers in Reproductive Health program, in collaboration with the University of Witwatersrand, conducted a study to learn more about the workloads, morale, and career plans of maternity nurses in South Africa.

The study was carried out in Limpopo, KwaZulu-Natal, and Mpumalanga provinces in South Africa. All public sector hospitals providing maternity services in the three provinces were notified of the study and then faxed a questionnaire. Site visits were made to 15 hospitals and 27 clinics.

Workload challenges and poor motivation

Overall, hospitals and clinics had vacancy rates of 23 percent and 27 percent respectively, with clinics in Mpumalanga having the highest percentage of positions that had been vacated. Turnover for skilled midwives was also high. Eighty-three percent of hospitals but only 11 percent of clinics had nurses specially trained in midwifery, and 42 percent of facilities reported that they had lost an advanced midwife during the last year.

The results suggest that although nursing staff turnover, shortages of staff, and workload are extremely problematic at some facilities, not all facilities are equally badly affected. In the sampled clinics, the mean workload was 770 clients per month per professional nurse. The mean number of deliveries performed per professional nurse per month in hospitals was 16.5. In terms of absenteeism, the study found that although a large number of days were taken off sick, these were often isolated days and not long periods of sick leave. The average length of service of sisters-in-charge (charge nurses) was more than five years. The mean number of years that professional nurses had worked at a facility was nine years in Mpumalanga and KwaZulu-Natal and nearly six years in Limpopo.

A high percentage of nursing staff working in public facilities said they were discouraged, burnt out, and considering leaving the facility where they worked. Sixty percent of professional nurses agreed or strongly agreed with the statement, “These days I don’t feel motivated to work as hard as I could,” and 43 percent agreed with the statement, “When I get up in the morning, I dread having to face another day at work.”

Reasons for leaving service

A range of factors was associated with nurses considering going overseas. Pay levels, poor opportunities for promotion, feeling unsupported by management, and having bad relationships at work were all associated with lack of desire to stay in one’s job. Nurses in the middle age group of 30–49 years and those with children under the age of 18 were more likely to be considering going overseas than younger or older nurses. Wanting a better future for their children and needing money to pay for school and university fees were mentioned as being key motivations for nurses going overseas.

It is not possible to discuss any issue related to health in South Africa without considering the impact of the HIV/AIDS epidemic. The epidemic was found to have a role, but not to be directly responsible for problems with nursing morale in maternity units. Only 15 percent of nurses said that the risk of catching HIV has made them think about leaving their jobs. Indeed, more nurses (37 percent) were worried about catching HIV outside of work.

The study found that both financial and nonfinancial factors influenced nurses’ decisions on where to work. Good management and a well-equipped hospital were as influential in nurses’ choices as a 15 percent pay increase. The qualitative data showed that various policy initiatives instigated by government to retain staff, such as an additional allowance for nurses working in rural areas, have had mixed outcomes. In the case of the rural allowance, only professional nurses (and not nursing assistants) receive extra pay when they work in rural areas. This means that nurses who receive the allowance feel badly for their colleagues and in many cases are faced with colleagues being uncooperative and saying, “You get the rural allowance, you do the work.”

The researchers note that interventions are badly needed to improve this situation, even though the low morale may be an obstacle to successfully implementing such efforts. Policymakers need to pay more attention to how policies are implemented and to the impact of policies on the relationships among nurses, and between nurses and managers in facilities. The researchers recommend that improving facility management should be a priority of South Africa’s National Department of Health. But they acknowledge that such a task may be challenging, since many facility managers themselves are demoralized.

SOURCE


OUTSIDE FUNDING

President’s Emergency Plan for AIDS Relief and the United States Agency for International Development, South Africa Mission
Surviving Catastrophe: The Elderly in Cambodia

For a period that began in the early 1970s and lasted more than two decades, the Cambodian people were victims in turn of bloody civil war, genocide and starvation, and renewed civil war. During the reign of the Khmer Rouge between 1975 and 1979, an estimated 1.5 to 2 million people—more than 20 percent of the population—lost their lives. Today, Cambodians endure extreme poverty and one of the highest HIV infection rates in Asia. Many of the people who died during civil strife or because of HIV infection were the spouses, sons, and daughters of the current elderly population. Thus, in addition to having endured extreme trauma, these older people may now lack core family support. However, relatively little systematic data exist on the social and economic situation or the health of Cambodia’s elderly.

To fill this information gap, Population Council demographer Zachary Zimmer and University of Michigan researcher John Knodel collaborated with Cambodian researchers Kiry Sovan Kim and Sina Puch of the Royal University of Phnom Penh. The investigators conducted the 2004 Survey of Elderly in Cambodia, a representative survey of 1,273 people aged 60 and older living in the six most populous provinces, including Phnom Penh. This study is the first comprehensive examination of the lives of the Cambodian elderly based on a widely representative sample. To learn more about the impact of HIV infection, the researchers collected supplementary data from a nonrandom sample of 100 older Cambodians who lost children over the last five years as a result of HIV and other illnesses.

In addition to providing information about Cambodia’s elderly population, “one of our chief goals with this study is to strengthen the ability of Cambodian scientists to conduct social science research in their own country,” states Zimmer. The Khmer Rouge destroyed research capacity in Cambodia by eliminating academic institutions. The researchers, who are working closely with faculty at the Royal University of Phnom Penh, published three studies based on the survey data and have several more papers planned.

### Percent of the elderly reporting limitations in activities of daily living in Cambodia compared to other countries

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cambodia</th>
<th>Burma</th>
<th>Indonesia</th>
<th>Philippines</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting up from lying down</td>
<td>18.8</td>
<td>7.8***</td>
<td>3.8***</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Eating</td>
<td>8.7</td>
<td>5.4***</td>
<td>3.1***</td>
<td>4.5***</td>
<td>3.7***</td>
</tr>
<tr>
<td>Bathing</td>
<td>8.4</td>
<td>6.4**</td>
<td>3.0***</td>
<td>7.2</td>
<td>6.2***</td>
</tr>
<tr>
<td>Dressing</td>
<td>6.2</td>
<td>5.0*</td>
<td>2.2***</td>
<td>5.9</td>
<td>3.2***</td>
</tr>
<tr>
<td>At least one limitation</td>
<td>23.0</td>
<td>10.5***</td>
<td>5.6***</td>
<td>9.0***</td>
<td>7.6***</td>
</tr>
</tbody>
</table>

***p<.01; **p<.05; *p<.10 when comparing proportion versus Cambodia


### A history of violence

The survey revealed the devastation wrought during the short but lethal period of Khmer Rouge rule. More than 40 percent of Cambodians over the age of 60 lost at least one child, and close to 25 percent of the women lost a spouse in those four years. Despite the bitter legacy, almost all elderly Cambodians have living children, owing to a high fertility rate. In fact, older people in Cambodia today typically have more surviving children than do older people in Thailand, owing to a sharp decline in fertility in the latter country. The Cambodian elderly rely heavily on family support, usually living with children and receiving modest amounts of money and material goods from them.

The survey assessed health in a number of ways. For instance, it asked respondents about their ability to carry out four activities of daily living: eating, bathing, dressing, and getting up from lying down. Zimmer analyzed this data and compared it to similar data from Burma, Indonesia, the Philippines, and Thailand. He found that elderly people in Cambodia experience limitations in each of these activities at higher rates than found in any of the other four countries. Twenty-three percent of older Cambodians report difficulties with at least one of these activities, as compared with 10.5 percent of the elderly population in Burma, 9 percent in the Philippines, and even lower proportions in Thailand and Indonesia (see table).

Using the information about activities of daily living, Zimmer calculated the “active life expectancy,” the expected remaining years of functional well-being, of elderly Cambodians. He found that women live longer than men but spend a greater proportion of their lives with disabilities. Not surprisingly, he found older age to be related to higher rates of limitation and less active lives.

“So far our research has shown that elderly Cambodians have faced harsh and traumatic circumstances, most notably war and extreme poverty,” says Zimmer. “All of this has affected their quality of life. Their health is poor and their lives are difficult.”

The study results point to a need for greater recognition by the government and international aid agencies of the requirements of this hitherto largely ignored segment of the population.

### SOURCES


### OUTSIDE FUNDING

The William and Flora Hewlett Foundation, the Andrew W. Mellon Foundation, the National Institute on Aging, the United Nations Population Fund/Cambodia, and the US National Institutes of Health.
Ethical Implications of Working with Children

To set up and evaluate programs for children and adolescents affected by HIV/AIDS requires solid data on their life situations and needs. Investigators and program managers gathering this information face thorny ethical issues. Are children who lack adult protection and guidance capable of understanding the potential consequences of participating in a study—in other words, can they give truly informed consent? Are survey questions about the death of parents or other sensitive subjects likely to cause anxiety or even emotional damage? Could visits from a researcher “brand” a child as HIV-affected and deepen the stigma he or she may already experience?

**Practical guidelines**

Few resources exist to help program managers and evaluators deal with the difficult and potentially harmful situations that may arise when working with children affected by HIV/AIDS. At the request of the U.S. Agency for International Development (USAID), a steering group was formed composed of representatives of the Horizons Program, Family Health International’s IMPACT Program, UNICEF, and USAID to develop practical guidelines for those who work with young people in international settings. The insights and experiences of this group and others working in the field were collected and analyzed in a handbook, copies of which are available free of charge. (To request a print copy, send your mailing address to horizons@pcdc.org; or you can download a PDF at http://www.popcouncil.org/pdfs/horizons/childrenethics.pdf.)

**Identifying challenges**

Recognizing that methods for working with adults cannot simply be transferred to young people, this new resource identifies challenges that confront program implementers and investigators who work with children and adolescents and proposes practical approaches to overcoming them.

Among the ethical questions the handbook explores in depth are:

- Is the data collection activity necessary and justified?
- Is the activity designed to elicit valid information?
- Have community and stakeholder concerns been considered?
- Have adverse consequences of the activity been anticipated?
- Are procedures in place to ensure that the activity proceeds ethically?
- Are there a clear plan and adequate funding for follow-up activities?

The handbook also provides case studies that highlight the roles of interviewers, program managers, data analysts, and others in ensuring that child-related activities are not harmful or unethical. These vivid descriptions illustrate real-life struggles with ethical dilemmas and offer useful insights into appropriate approaches to working with youth. They are not examples of best practices: some frankly identify missed opportunities or oversights and examine the lessons to be learned.

As groundwork for the development of the publication, an expert consultation meeting took place in 2003. The gathering included researchers and service providers with expertise in psychology, child development, ethics, pediatrics, sociology, anthropology, and social work. This broad mix of perspectives and expertise led to a fruitful exchange about both ethical concerns and the practical issues involved in implementing effective standards.

Participants discussed the ethical responsibilities of professionals working with children affected by AIDS and other difficult situations, recognizing that such children often face poverty, stigma, or abuse. Participants agreed that program managers and researchers must take steps in advance to ensure that referral systems to local services are in place to help children in these situations, and that both parents or guardians and children know that abuse will be reported to the appropriate authorities.

Among other topics raised by participants and covered by the publication are gaining meaningful informed consent from children and creating opportunities for children to participate as advocates on their own behalf in study design, instrument development, and results interpretation.

“Because of the power imbalance between adult investigators and child informants, gathering information from children requires additional precautions to protect their confidentiality, privacy, and emotional well-being,” said Katie Schenk of Horizons/Population Council, who coordinated the development of the handbook. “Involving everyone who participates in program development and research is critical to ensuring that these precautions are met.”

**SOURCE**


**OUTSIDE FUNDING**

U.S. Agency for International Development
Little is understood about the molecular mechanisms that regulate sperm production—knowledge that would be key to the development of male contraceptives. Recent research conducted in the laboratory of Patricia L. Morris, a cell biologist and pharmacologist at the Population Council’s Center for Biomedical Research, suggests that a protein known as SUMO-1 is involved in numerous aspects of this process. Gaining a greater understanding of SUMO’s role in producing sperm, or spermatogenesis, may lead to insights about male infertility and reveal potential targets for male contraception.

**SUMOylation**

SUMO—which comes in two varieties, SUMO-1 and SUMO-2/3—is a small protein that attaches to other proteins in a process known as SUMOylation. Cells use SUMOylation to alter proteins and influence their functions. SUMOylation can change a protein’s ability to remain in place, communicate with cells, and participate in the activation of genes. Although SUMO-1 is found in the testis, almost nothing was previously known about its reproductive role.

From rodent and human testes, Morris and her team isolated sperm, germ cells (which give rise to sperm), somatic cells (critical supporting testicular cells not giving rise to sperm), and intact seminiferous tubules (tiny tubes in the testes in which germ cells grow and mature and sperm are produced). The human material came from biopsies taken from men with normal spermatogenesis and men with defective spermatogenesis. These procedures were approved by an institutional review committee, and the men gave informed consent. All of the men were being treated for infertility at Weill Cornell Medical Center. The men with normal spermatogenesis were fertile as a result of blockage in the transport of sperm. “In both humans and rodents, we followed the presence of SUMO-1 and sumoylated proteins during spermatogenesis, from the early proliferating germ cell to the mature sperm,” says Morris. “We have begun to characterize which proteins in which cells get sumoylated and at what point SUMOylation happens in the process of spermatogenesis.”

For the first time, this study provides compelling support that in both humans and rodents, the regulation of spermatogenesis may be mediated by interactions between SUMO-1 and a molecule known as the androgen receptor. The male sex hormone testosterone influences cells by binding to the androgen receptor. Interactions between androgens and their receptor are essential for spermatogenesis. SUMO-1 may alter the course of spermatogenesis by sumoylating the androgen receptor, thereby altering androgen-dependent processes. The researchers also found important differences in the activity of SUMO-1 in rodents and in people. During a stage in spermatogenesis called the pachytene stage, genes in the X and Y chromosomes (known as the sex chromosomes because they determine the sex of the offspring) become inactive. The genetic material then condenses into a structure known as the sex body. The findings suggest that SUMO-1 plays a different role in this process in people and in rodents.

SUMO-1 appears to be more abundant in the mouse sex body than in that of the human. In human pachytene spermatocytes, SUMO-1 and another factor that binds to DNA, known as a histone, show discrete patterns. In contrast, in rodent pachytene spermatocytes, the two proteins overlap the entire sex body. Differences are also found in rodent and human SUMO-1 during meiosis—the type of cell division that results in sperm and eggs. Meiosis proceeds in several stages. During the first stage of meiosis in rodents, SUMO-1 is restricted to the sex chromosomes. In human spermatocytes during this stage, Morris’s data indicate that SUMO-1 likely plays a role in the organization of other chromosomal regions as well.

“For example, our data indicate that in human male germ cells but not in those of rodents, SUMO-1 may play a role in centromere/kinetochore function,” says Morris. The centromere is the pinched “waist” of a chromosome. The kinetochore is the part of the centromere to which spindle fibers attach during cell division. The spindle fibers help to separate the chromosomes properly into the resulting daughter cells. In most organisms (other than bacteria and algae), the molecular mechanisms that ensure accurate chromosome segregation during cell division are critical to maintaining the normal number of chromosomes. If a mechanism, such as the one facilitated by the kinetochore, is disrupted, meiosis could result in sperm or eggs that have more or less than the normal number of chromosomes. Embryos that result from such sperm or eggs are likely to miscarry or develop into infants with significant birth defects, such as Down syndrome.

Comparing SUMOylation in humans and rodents may provide important insights into centromere formation and kinetochore assembly.

**SOURCES**


**OUTSIDE FUNDING**

George Frederick Jewett Foundation, F. M. Kirby Foundation, and National Institutes of Health
The researchers determined that scant data exist on the causes of changes in the timing of marriage, which may range from increased schooling for men and women who are married during the teenage years. The clear exceptions are South America for both sexes, and West and Middle Africa and South and Southeast Asia for men only. While early marriage is declining, it is important to note that among women aged 20 to 24 interviewed by the DHS, one-third were still married prior to age 18.

The amount of schooling completed before marriage has also been increasing for both men and women, except for men in Bangladesh. In three of the countries, differences in the amount of schooling received by husbands and wives have also decreased. The exceptions are Guatemala and the Philippines, where the difference in years of schooling has not changed over time, and Ethiopia, where the difference is increasing, with husbands receiving more education.

Husbands’ assets at marriage have increased over time in four countries, declining only in Ethiopia and remaining constant in the Philippines. Wives’ assets at marriage have increased in Guatemala, Mexico, and South Africa, remained constant in the Philippines, and declined in Bangladesh and Ethiopia.

The reduction of husband–wife gaps in age at marriage and in schooling indicates potential improvements in the balance of power within the family, but the distribution of assets at marriage continues to favor husbands. It remains to be seen whether the reductions in gender gaps in age and schooling will offset the persistent gender gaps in wealth.

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The studies in this volume served as vital information sources for the National Academies report on the transitions to adulthood in developing countries. They complement the report and provide useful contributions in their own right. “Our hope is that these studies will be useful to those charged with making and implementing public policy, as well as to scholars from different disciplines and leaders of civil society organizations wishing to build on the panel’s foundation,” says Lloyd.

Gender and Family Dynamics


HIV/AIDS


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The emigration of nurses from South Africa—and the pressure it places on nurses who remain—may be contributing to a high rate of maternal mortality in that country.

See page 2

SAFE MOTHERHOOD

The emigration of nurses from South Africa—and the pressure it places on nurses who remain—may be contributing to a high rate of maternal mortality in that country.

See page 2

AGING

Elderly people in Cambodia are faced with tremendous disadvantages and have a potentially greater number of and more severe health problems than older people in other parts of Asia or the world.

See page 3

HIV/AIDS

Can children who lack adult protection and guidance give truly informed consent?

See page 4