

Better Late Than Never: Reflections on the Delayed Prioritization of Cervical Cancer in International Health

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Cervical cancer has disproportionately affected the world's most vulnerable women for generations, yet only recently has the disease become an international health priority. Using ethnographic evidence from a study in Iquitos, Peru, I identify three factors that have contributed to a historic blind spot regarding cervical cancer in underdeveloped regions: (a) transition theories predicting the emergence of cancer with increasing societal development, (b) chronic vs. infectious disease categories that miss the significance of infectious-associated cancers, and (c) dependence on epidemiologic statistics from underdeveloped regions for determining health care priorities. Implications for theory and education are discussed.

Cervical cancer in underdeveloped world regions and underserved populations is an important topic that has appeared with increasing frequency in health care literature since the mid-1990s. Contrary to what often is taught in health-related education, however, this cancer is not part of an emergence of chronic/debilitative diseases in developing countries, following better control of infectious disease. Rather, it is a cancer that has disproportionately affected

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the world's most vulnerable women for generations. Why, then, was cervical cancer not an international health priority long ago?

In this article, I explore three factors that have played roles in creating and sustaining a historic "blind spot" regarding cervical cancer, delaying its recognition and prioritization in health care in underdeveloped regions. These factors, which significantly shape health care thinking, include development and transition theories, disease categorization, and epidemiologic statistics. A recent ethnography, done in Iquitos, Peru, paints an intimate portrayal of cervical cancer in an underdeveloped region and provides evidence supporting this article (Hunter, 2002, 2004).

BACKGROUND RESEARCH

The Setting

Iquitos is located in northeast Peru and is the capital of the country's largest department, or state, Loreto. It is the largest city in the Peruvian Amazon, a city in the midst of jungle, with a population of well over 400,000. It is the site where the many tributaries flowing down from the Andes merge together to become the great Amazon River. In the midst of this network of rivers, Iquitos is intricately linked with many surrounding rural villages through the exchange of food, people, animals, medicines, goods, and information.

Once an important rubber boom capital, Iquitos is now a quiet town of small commercial businesses, logging, agriculture, oil, and tourism. Only a small number of people prosper from the current enterprises, and the majority of the population is very poor. The poor live on the periphery of the center city in simply constructed wood homes with thatch or tin roofs, similar to those in rural river villages, without piped water or trash removal. Many are unemployed or find only occasional work. Nonprofessional jobs (full time), at the time of the research, paid between 200 and 300 soles per month (US\$60 to \$100). Professional jobs paid somewhat more, 350 to 800 soles per month (US\$105 to \$260). Like the poor in many world regions, home remedies and medicinal plants were used for prevention and treatment of illness, biomedical health care was purchased only if the illness worsened, and spending time and money for preventive services was rare.

Methods

The Iquitos study was ethnographic in nature and was conducted from August 1998 to May 1999 (Hunter, 2002). Ethnography allows a researcher to be present over time and to observe everyday life, the way practices are built out of shared knowledge, the meaning people find in their lives, and the constraints and pressures to which those lives are subject (Agar, 1996; Emerson, Fretz, & Shaw, 1995). Two types of ethnography were used, as described by Agar (1996). "Narrative" ethnography elicited people's stories of their cancer

experiences, and “encyclopedic” ethnography provided information about the local culture to serve as a background for narrative analysis. Background exploration included the following: (a) the city of Iquitos and surrounding river villages; (b) national and regional morbidity and mortality statistics; (c) Iquitos hospitals, health posts, and records accessed with the permission of the Ministry of Health; (d) practices of local *vegetalistas* and healers; (e) Lima’s National Cancer Institute or *Instituto Nacional de Enfermedades Neoplásicas* (INEN), Peru’s only cancer hospital; and (f) household illness interviews. The extensive household illness interviews were conducted in a port community, where housing structures, occupations, the market area, and interaction of urban and rural lives made it representative of much of the poorer population of Iquitos. Interview questions were designed to gather background information regarding the larger cultural understanding of and responses to common illnesses. Thirty of the approximately 150 households in the neighborhood were randomly selected and interviewed. Questions about the family’s knowledge of and experience with cancer were included at the end of the interview.

In addition to the collection of more than 60 cancer narratives, eight women in some stage of cervical cancer or diagnosis were followed as case studies. Two of these women had received positive Pap tests and were seeking follow-up, a third woman had surgery in Lima during the study, and a fourth had radiation therapy in Lima 6 years previously and now was suffering treatment-related problems. The four remaining women had widespread disease, and all died in their homes during the month of February 1999. My background, both as a nurse with experience in hospice and palliative care and as an anthropologist, provided a combination of skills well suited to the intimate and intense nature of this research.

Findings

In interviews of individuals in 30 households, I heard more than 50 stories of cancer. Of these, 31 were descriptions of cervical cancer. The stories demonstrated an intimate knowledge of suffering from the untreated disease. Narratives included comments such as these:

Yes, my mother-in-law died of cancer, a friend, and also a neighbor. I have a sister that had cancer. It is an experience that has had a great impact on me.

My mother started to lose weight and had nausea, and as time went on she started to have vaginal bleeding. She started bleeding a lot, and then she had swelling. They wanted her to go to Lima, but we didn’t have the money. Every day she got worse. We were with her until the moment she died. I watched my mother-in-law die, also. We also have a friend here in [the neighborhood] with cancer.

I saw one woman, and she said that she was in severe pain. She had pain when she urinated and when she defecated. She had blood, like hemorrhaging. She had bleeding every day, like menstruation. She had a lot of fever. And she had that bloody discharge that smelled bad.

I have the experience of one of my sisters. She died of cancer. I know many women who have died with cancer. They had bleeding. Day by day, they dried up. They get very, very skinny and yellow. That's how my sister died, very bony.

The oldest woman of each household was asked, "Do you think that cancer is a new disease, or is it old? Did you hear of cancer when you were young?" They responded:

It is a very old illness. You know, it comes from long ago.

It is very old. The woman suffers much of this.

It is an illness from early times.

It has existed for a long time. Yes, I knew of it when I was young.

It has existed for many years, but the people didn't know about it.

Cancer is old, because my grandparents told me [about it.] My mother died with cancer.

A cervical cancer screening program had been started in Iquitos 2 years prior to the research, but its effects were not far reaching. Few women sought regular Pap tests for solely preventative purposes but went to doctors only when bothersome or frightening symptoms arose. When precursor lesions or preinvasive cervical cancers were found, very few women in the area had insurance or could afford to follow through with any treatment recommendations. Local physician informants estimated that more than 80% of cases were diagnosed in advanced stages of disease, if they were diagnosed at all. Treatment for advanced disease was available only in Lima, at a cost that less than 2% of the population could afford, according to informants. Women with cervical cancer suffered and succumbed to the ravages of the disease at home; thus the realities and scope of the disease rarely were seen by most physicians, except those in gynecological clinics at the time of diagnosis and in later emergency room (ER) visits (Hunter, 2002, 2004).

An ER physician informant at the large public hospital in Iquitos estimated that 5% of their visits were from women with cervical cancer-related emergencies including vaginal hemorrhage, bowel or bladder obstruction, or severe pain. Based on the number of ER visits to that hospital in 1998, 5% represented 1,800 visits at one of the three hospitals in the city. One of the city's gynecologists estimated that he saw 45 to 55 cases of cervical cancer each year. If each of Iquitos' 16 gynecologists saw the same number, that would be 720 to 880 cases each year. The gynecologist estimated that the cumulative lifetime risk for cervical cancer in the region was 1 in 10 women. Because women in Iquitos are diagnosed late and very few receive treatment,

the mortality nearly equals the morbidity. Why was cervical cancer not more of a health care priority in the region?

Peru's national mortality statistics indicate that very few deaths occur from cervical cancer in this region. Mortality statistics published for the Department of Loreto documented 6 deaths from cervical cancer in 1990, 12 in 1991, 10 in 1994, 17 in 1995, and 22 in 1996 (Ministerio de Salud de la Republica del Peru, 1991, 1995, 1996). What accounts for the vast incongruities between local knowledge and health statistics?

FACTORS CONTRIBUTING TO DELAYED ATTENTION TO CERVICAL CANCER

Transition and Development Theories

Since the mid-1900s, international and national health care priorities have been guided by transition theories that predicted modernization patterns for "developing" countries. Transition theories, both demographic and epidemiologic, have their roots within the much larger umbrella of development theory, specifically the very pervasive modernization theory that gained popularity in the 1950s. Central to modernization theory was the idea of progress (Bury, 1955). Proponents of modernization theory proposed that all societies go through similar transition phases from traditional to modern, and attempted to establish a model for understanding universal patterns, that is, how societies moved from stage to stage, how to identify what stage a given society currently occupied, and how to help all societies arrive at modernity (Mittelman & Pasha, 1997). Rostow's 1960 volume, *The Stages of Economic Growth*, was an influential reference providing intellectual rationalizations for development efforts. The end point of the modernization vision approximated the traits of the Western nations. If a society at a so-called lower stage wanted to resemble a society at a so-called advanced stage, it needed to imitate the pattern of the advanced society and follow its advice (Mittelman & Pasha, 1997; Wallerstein, 1997).

Demographic and epidemiologic transition theories were part of this societal progress analysis. The demographic transition refers to the spectacular decline of death rates followed by a decline in birth rates observed in earlier industrialized countries. These changes are credited primarily to a combination of improved living standards that accompany better water supplies, better housing, better and more dependable food, and sewage and garbage disposal. Improved standards of living allow more infants to survive, thus parents could consider fewer births (Janzen, 2002). Omran's (1971) description of epidemiologic transition provided an explanation of the mortality component of the demographic changes described above. The description of epidemiologic transition included Omran's observation that chronic debilitating diseases, such as cancer and heart disease, seemed to emerge in

later stages of development, after infectious and parasitic diseases had been brought under control.

Because worldwide progress mirroring Western societies was, at the time, viewed as linear and inevitable, Omran's descriptive theory was used as a predictive theory. Many international health care policies and priorities were developed based on these described stages of disease patterns. Programs for underdeveloped regions focused on infectious and parasitic diseases, and attention to chronic debilitating disease, such as cancer, was deferred for future planning when the incidence was expected to rise. "Cancer" in this schema was discussed as a single, large aggregate of diseases collectively placed on the chronic side of a chronic-infectious dichotomy.

Cancer as Chronic Disease

Based on scientific knowledge of the time, epidemiologic transition theory set up an expectation that *all* cancers would emerge in later socioeconomic development. As researchers and epidemiologists have learned more about various types of cancers and their distribution, however, what has become apparent is that types of cancers are divided, based on causal/risk factors, as to whether they flourish in resource-rich or resource-poor environments. Lung, breast, and colorectal cancers seem to fit the image of diseases of abundance, increasing with cigarette smoking and diets high in animal fat and low in fiber (Dubos, 1980). In contrast, stomach, esophageal, and cervical cancers exist at the other end of a continuum. These forms of cancers often exist as diseases of austerity, related to malnutrition, poor food preservation, diets low in vitamins and animal fat, and infectious agents such as the *helicobacter pylori* bacterium (stomach cancer) and human *papillomavirus* (cervical cancer). The now-recognized association of some cancers with infectious agents blurs the boundary between infectious and chronic/debilitative disease (Muñoz, 1998; Robles, 1996). Infectious-associated cancers are the illnesses that original epidemiologic transition theory missed, and that have remained "hidden hybrids" for decades.

Cervical cancer is an excellent example of the blurred boundaries between infectious and chronic/debilitative diseases. Although the natural course of untreated cervical cancer is chronic—that is, long, debilitating and fatal—the discourse that surrounds its cause and prevention is that of infectious disease. The causal agent for cervical cancer is human *papillomavirus* (Muñoz & Bosch, 1996), a sexually transmitted infection, and research is progressing toward available vaccines for the virus' more carcinogenic forms.

Reliance on Morbidity and Mortality Statistics

The construction of knowledge in Western health care is based in large part on epidemiology, as are the processes of identifying and prioritizing health problems in populations. The completeness and reliability of national

epidemiologic statistics from underdeveloped countries, however, must be scrutinized closely. Consider the discussions of morbidity and mortality below.

Visibility of morbidity. Although morbidity often is thought of in biological or statistical terms describing disease, Johansson (1991, 1992) argues that morbidity is actually a culturally managed process. According to Johansson, various cultural forces affect the visibility of morbidity in society, including (a) diverse and changing meaning and measurement of health and disease, (b) the discovery of new diseases, (c) new techniques for diagnosing and treating diseases, (d) earlier identification of diseases and treatment of chronic conditions that prolong life and the duration of illness episodes, and (e) cultural legitimization of a lower breakpoint on the health–sickness continuum at which “healthy” ends and “sick” begins. She asserts that morbidity is a very complex status to measure, and that even when morbidity data exist in underdeveloped regions, their accuracy and ability to be compared across time and location are questionable:

There is simply no way to explain observed trends in sickness without first understanding the reporting system that produces morbidity data and how it reflects the way people and doctors are trained to perceive, detect and report sickness, and the differential incentive systems (social and economical) that shape reporting behavior over time at the individual or institutional level. (Johansson, 1992, pp. 80–81)

What is “visible” regarding cervical cancer in Iquitos depends on where and through what lens one looks. Peru’s Ministry of Health gathers morbidity data only on infectious diseases; cancer cases are not counted. The only cancer morbidity data available in Peru are from two International Agency for Research on Cancer (IARC) approved cancer registries, one in Trujillo and one in Lima. The information from each registry is clearly partial, as it covers only the surrounding metropolitan area, but comparison of data between such registries is effective in establishing worldwide trends. The registry in Trujillo, Peru, cites an incidence of cervical cancer of 115.4 per 100,000 women between the ages of 35 and 64 (as compared with 8.4/100,000 in the United States in 2000; IARC, 2001). At the time of the study, the cumulative lifetime risk for cervical cancer according to the Lima registry was 1 in 35 women (Maes Heller, 1998). Based on worldwide cancer trends illuminating that cervical cancer is a cancer of austerity vs. abundance, one would expect *more* cervical cancer in rural Loreto than in the developed urban areas of Lima and Trujillo. (Remember the Iquitos gynecologist’s estimation of cumulative lifetime risk of 1 in 10 women.) From the viewpoint of older epidemiologic transition predictions, however, one would expect the opposite.

The clinical visibility of cervical cancer is low for most health care providers in Iquitos. Physicians had developed very different perceptions

of the local significance of cancer, each based on experience with his or her own population of patients. A general surgeon stated that he thought that there was very little cancer in Iquitos/Loreto:

I think that there is very little. Because all the cancers that come here [to the Regional Hospital], about 70% have surgery consultations. They come to the hospital. Few cases of cancer come here.

It was true that few cases came to the hospital. Based on admission records reviewed from 1993 through 1998 at both the general and regional hospitals, cancer diagnoses represented only about 1% of admissions.

Author: Are there more that don't come?

Surgeon: I don't believe so. Those that are not diagnosed, I believe, are minimal.

He reported seeing three kinds of cancer with any frequency: basocellular carcinoma, a skin cancer of the face; plantar melanoma, a cancer originating in the sole of the foot; and fibro sarcoma.

A gastroenterologist at the Regional Hospital stated that stomach cancer was low in Iquitos, less than the world frequency, and that there was very little colorectal cancer. He claimed that hepatic cancer was the worry of the gastroenterologist:

Gastroenterologist: Cancer of the liver, yes, because hepatitis B is endemic. Among my patients, the youngest children are 7 years old. And the contact came from the mother's milk, for hepatitis B. If the child is exposed to hepatitis B before he reaches adolescence, it ends up a hepatic cancer. Two years ago they added a national program of vaccinations for newborns against hepatitis B, but the adult population, the majority have no vaccinations.

Author: Do you think that there is more liver cancer than cancer of the cervix?

Gastroenterologist: Yes, I believe that among the cancers, liver cancer is above the frequency of cancer of the cervix. Yes.

According to data from Lima's cancer registry, however, the age-adjusted mortality rate for cervical cancer ranked third among women and fifth overall, with an incidence of 9.3/100,000, while liver cancer ranked ninth, with an incidence of 3.1/100,000.

A physician working in the rural health post for a river village a few hours from Iquitos had still a different impression:

Rural Physician: The incidence of cancer has not been studied here in Iquitos, Peru, but the rate is very high of gastric cancer. In this zone,

it is a consequence of having taken malaria treatment continually. It is clear that they are medicines that are potent carcinogens. Apart from this and [poor] basic nutrition, is *masato* [a yucca-based, fermented drink], because they are practically alcoholics from birth.

Author: And cervical cancer?

Rural Physician: Not so much, because here nature helps a lot. For example, here, for this lifestyle with sex initiated early, I thought that I would see a good quantity of [cervical] cancer, but no, the people eat a lot of fruit that has great curative power.

As mentioned earlier, only the gynecologist and ER physician interviewed expressed awareness of the significance of cervical cancer in Iquitos. The Director of Epidemiology for the Department of Loreto joined this group when he stated the following:

We are in transition epidemiologically in this country, but personally, I think that there has always been cervical cancer. It is only that now there are programs that administer the care of cancer . . . and diagnosis is becoming refined. But this cancer has existed for a long time. . . . I believe that the problem of statistics is hiding the true dimension of cancer. Compared to the written data, probably cancer of the cervix happens much more frequently than we think. It is very frequent that we find here in the region sexually transmitted diseases in sexually active women, and on examination, we find that the neck of the uterus is not very characteristic of a healthy cervix. So probably it will be more frequent than we think from the statistics.

Mortality. Although mortality statistics may be much less conceptually problematic than morbidity, mortality is also culturally dependent to some degree (Johansson, 1991, 1992). Mortality profiles must be scrutinized for issues of underreporting of deaths and inaccurate reports of cause of death. The Pan American Health Organization's (PAHO's) report for 1992 estimated the national average of underreporting of deaths in Peru at 50.8%. Underreporting in the Department of Loreto was estimated at 79.7% (PAHO, 1994). Recording a death in Iquitos costs money, and is mainly done to obtain permission to bury in the public cemeteries. It is rarely done by the very poor or for infant deaths.

Another factor is inaccurate documentation of cause of death. It is known that many cervical cancers hide under the classification of the "body and other unspecified parts of the uterus" but cervical cancer also may hide under other diagnoses as well. Since there is little to nothing that can be done locally for women with cervical cancer, they often are unknown to the medical system until a family member brings a death certificate for physician signature and describes the symptoms of the deceased. Cause of death is based on these varying descriptions. The severe malnutrition, emaciation, anemia, abdominal

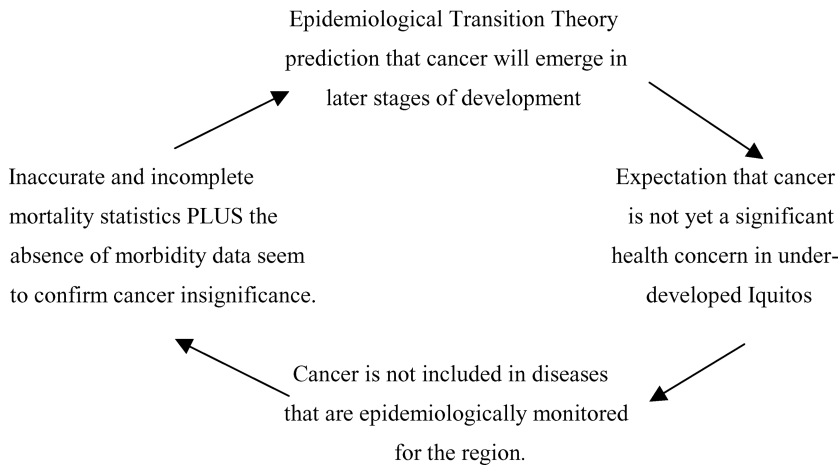


FIGURE 1 Cycle of cancer insignificance.

pain, and occasional respiratory involvement in terminal stages of cervical cancer could lead the cause of death to be classified as a cancer of the digestive or respiratory system or simply as nutritional deficiency and anemia.

An example of inaccurate documentation of cause of death was found among 9 women in the current study known to have died of cervical cancer. Of these 9, only 5 had death registration; causes of death for 2 were registered as cancer of the cervix, 1 as uterine cancer, 1 as stomach cancer, and 1 as bronchial asthma. The misclassification of cervical cancer as stomach cancer in this region could be the result of the local reference to cervical cancer as cancer of the *vientre*. Locally, the Spanish-language term *vientre* refers to female organs, but outside of the local vernacular, it refers to belly, lower abdomen, or bowels, and easily could be transcribed in mortality statistics to stomach or bowel cancer. Terminal complications of cervical cancer such as severe malnutrition, emaciation, anemia, abdominal pain, and intestinal or urinary tract obstruction could lead to misclassification of cervical cancer as a cancer of the digestive or urinary system or as nutritional deficiency. Terminal cancer also can involve the respiratory system, as was the case in the woman whose cause of death was recorded as bronchial asthma. Moreover, PAHO (1998) estimated that the proportion of deaths attributed to ill-defined signs, symptoms, and conditions was 30.6% overall, and 69.8% in less developed regions.

THE VICIOUS CYCLE

What can be extracted from the previous sections is that the factors of theory, disease classification, and medical dependence on epidemiologic statistics come together to form a “cycle of cancer insignificance.” This cycle (Figure 1)

starts with the embedded expectation set up by epidemiological transition theory that “cancer,” a chronic, debilitating disease, will not yet be a significant concern in underdeveloped Iquitos. In part due to this expectation, no cancer types have been included in the diseases monitored in the region. The resultant lack of morbidity data plus incomplete and inaccurate mortality data typical of underdeveloped social infrastructures further perpetuate the lack of recognition of cervical cancer as a significant public health problem. This cycle, despite a growing understanding of cancer-type distribution, has long perpetuated the lack of attention to infectious-associated cancers that are prominent not only in Iquitos but in many underdeveloped world regions.

“Ultimately, the conversation is about politics because it is about power. The question is who has the power to define risk and to insist that their view should prevail over those of others” (Kaufert & O’Neil, 1993, p. 51). In this case, the predictive power given to historical epidemiological patterns, the language of disease classification (i.e., cancer as chronic disease), and overconfidence in the validity of statistic, have held the power to create and sustain medical neglect of cervical cancer in regions such as Iquitos. This has been the case even in the face of contradictory evidence from local knowledge and from worldwide cancer registry data that indicate that cervical cancer is a huge public health issue in such regions.

CHANGING DEVELOPMENT AND TRANSITION THEORY

It is important to acknowledge that transition theories have been both criticized and enhanced since first appearing in their original form (Caldwell, 1982; Caldwell & Caldwell, 1991; Chen, Kleinman, & Ware, 1992; Christakis, Ware, & Kleinman, 1994; Frenk, Bobadilla, Stern, Frejka, & Lozano, 1994; Gaylin & Kates, 1997; Johansson, 1991, 1992; Mackenbach, 1994; Murray & Chen, 1994a, 1994b; Olshansky & Ault, 1986; Omran, 1983; Riley, 1990, 1992; Young, 1988). They are now commonly considered within an expanded framework of “health transition” (Caldwell, 1982; Caldwell & Caldwell, 1991), which goes beyond the statistical base of older transition models to include sociocultural, economic, political, historic, and public health factors that affect health change. This framework enables holistic and comprehensive assessment and was the theoretical basis for the Iquitos ethnography. Nevertheless, threads of epidemiologic transition theory’s original concepts and the notion of cancer as a disease of developed nations still exist.

Development theory also has been the subject of much criticism. Development theory has been criticized for its lack of explanation for underdevelopment, its assumptions of linearity and inevitability, its Eurocentric perspective, its inattention to crucial differences between historical experiences of “first” and “third” worlds, and its exclusive concentration on “internal”

problems of a particular country. A new paradigm of dependency theory emerged in Latin America in the 1960s and 1970s, that put forth the argument that it was the history of external exploitation of traditional societies, and not their isolation, that had created their underdevelopment (Cardoso, 1972, 1977; Dos Santos, 1970; Frank, 1967, 1968; Furtado, 1971). In the 1970s and early 1980s, concepts of dependency theory were extended from their Latin American context to the study of the world system as a whole and its division of labor (Amin, 1974; Frank, 1978a, 1978b, 1981; Wallerstein, 1974, 1975; Wolf, 1982).

By the 1990s, in some intellectual circles, the concept of development had been declared dead (Gardner & Lewis, 1996). Similar to transition theories, however, remnants of the old perspective remain alive and well. Wiarda (1987) warned that the deep societal embeddedness of modernization concepts would not quickly pass away:

A long time must pass before policies based on developmental assumptions of the past will change. . . . They are embedded deeply in our educational system, our values, and our civic consciousness and ideology; and these will not be changed quickly or easily. . . . These assumptions are strongly entrenched in the foreign assistance bureaucracies; and we know that a policy consensus on these or any other issues once arrived at is difficult to alter. (p. 63)

Gardner and Lewis (1996) continued to grapple with the challenges and opportunities poised by paradigmatic transition, and the still-pervasive use of development discourse:

And yet, so persuasive is development as a concept that many people discussing global poverty continue to use the term as a working tool, even if deriding it philosophically. This is not simply because notions of development are deeply interwoven with our understandings of the world—although in many post-industrial societies this is certainly true. As well as being a series of interlinked concepts and ideals, it is also a set of practices and relationships. Development agencies are actual institutions, which affect the world around them and spend billions of dollars a year. Likewise, development plans, workers and policies are all objective entities. We cannot simply will them into non-existence by insisting that they are constructs, however questionable the premises on which they rest may be. . . . We therefore assume that development is an enormously powerful set of ideas which has guided thought and action across the world over the second part of the twentieth century; it involves deliberately planned change, and continues to affect the lives of many millions of people across the world. (p. 2)

Although much of the basis of these theories has been largely debunked academically, well-ingrained concepts of progress, societal development, and related health care priorities have been slow to change in health care literature and practice. Phrases such as *cardiovascular disease and cancer are examples of diseases expected to emerge in later stages of socioeconomic development* are alive and well and continue to appear in biomedicine, epidemiology, nursing, public health, and social science texts. This powerful little phrase has been a major contributing influence in establishing and maintaining health policies and priorities that ignore the significance of cervical cancer and other infectious-associated cancers in underdeveloped areas of the world.

IMPLICATIONS FOR CANCER EDUCATION

As discussed above, assumptions based on original epidemiologic transition theory still exist. They often are summarized in educational texts in one- to two-sentence statements that need to be plucked out and reexamined within the context of history. Much insight can be gained from returning to epidemiologic transition theory's roots in modernization theory, scrutinizing how these ideas have infiltrated various cultures and practices, and reflecting on how they have affected international relations and health care. The value and emphasis placed on theory in education must be balanced with consideration of how theory can be misused in ways that restrict thought rather than guide it. The issues surrounding cervical cancer in this article provide an excellent example. Thus, while epidemiologic transition theory as a historic description or guideline does not need to be entirely discarded, "we need to be very careful . . . not to read into these patterns the force of laws" (Janzen, 2002, p. 107).

Casually used categories of infectious and chronic disease need to be reexamined. Disease categories should be disaggregated and examined (a) in terms of variability of the environments in which diseases thrive and (b) in terms of acute, infectious, and chronic aspects of specific diseases. For example, malaria is a parasitic disease, but its resultant anemia and possible cerebral complications can assuredly create chronic health problems. Diversity within aggregate disease groupings such as "cancer" must be recognized, as must the potential harm of making recommendations or predictions for the disease group as a whole.

Reading and learning new concepts in a classroom are beneficial, but there is no substitute for being there. Educational opportunities ranging from local civic engagement to visits to underdeveloped regions of the world emphasize the value of local realities. These realities are needed to ground health education, to design relevant development efforts for a given region, and to better understand the background of immigrants. As in the case of

cervical cancer in Iquitos, it is important to challenge theory when it is incongruent with local realities, to go beyond disease statistics published for the region, and to consider the cultural construction of morbidity and mortality. Scientific discourse has a decidedly negative impact on health when theory, disease classification, and recorded statistics are deemed of greater value than the truth that sits in front of us within local reality.

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