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Multi-Sectoral Approaches to Health and Nutritional Issues

Fitzroy Henry^a

This issue of **CAJANUS** strengthens the need for a multisectoral approach to health, food and nutrition problems since they overlap with many sectors – health, trade, agriculture, environment, marketing and culture. Ballayram shows that food security is an integral part of a process of nutrition and health development and embodies four major components – food availability, household access, nutritional adequacy, and sustainability. For food security at the household level to exist the household should have access to the food needed for a healthy life for all its members, and should not be at undue risk of losing such access. This concept of food security has advanced beyond the narrow vision of the physical availability of food supplies over time and space to include the socio-economic and nutritional aspects of having adequate economic and physical access to safe and nutritious food supplies. The strategies for increased agriculture production should therefore ensure that the food

being made available supports a goal of providing healthy diets for the population. Food policies that are limited to the acquisition of cheap foods without regard to their contribution to public health and well-being are short-sighted and their consequences could retard human development.

In the global context, national food security policies should therefore (a) include food production and import strategies aimed at population food security and health goals; (b) develop food price policies and practices in relation to household income and earning power; and (c) incentives and disincentives for a food price policy package for improving food security and health.

While on the surface there appears to be little linkage between globalization and breastfeeding, Henry shows that the impacts could be pronounced and profound. When the need for economic gain puts profits before people – there is a major concern for the social sectors such as

^aDr. Fitzroy Henry, is Director, CFNI.

health. In such circumstances the needs of mothers and children can be easily jeopardized. For example, breastfeeding-friendly practices can be lost, while the commercialization of infant feeding practices through breastmilk substitutes can become the norm. Trade agreements should not be used as an excuse not to develop and enforce national infant feeding policies which cover exclusive breast feeding, indigenous complementary foods and the labeling of infant foods and food safety standards. Further, the globalization process must not supersede the international code of marketing of breastmilk substitutes.

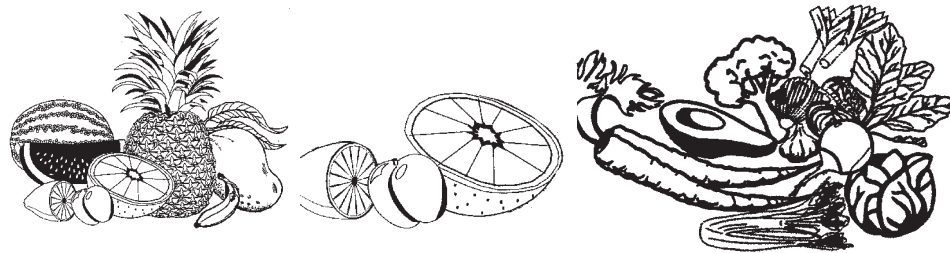
The paper by Sarah Jones examines the potential effects of the AIDS epidemic on the levels of undernutrition in Jamaica. Ten recommendations are made to ensure that the gains in recent decades of reducing undernutrition are not lost to the HIV/AIDS epidemic.

School feeding programmes are now an important part of the social safety net policy of almost all Caribbean governments. But little is done to evaluate these programmes to obtain maximum benefit from them.

Gulliford and colleagues studied the free school meals programme in Trinidad and Tobago. They made several pertinent observations and conclusions about the objectives, efficiency and policy directions that have implications for similar programmes elsewhere in the Caribbean.

Unlike most studies on adolescents which focus only on their health status, the paper by Halcon and colleagues present unique findings that include issues such as school performance, alcohol, drug use, sexual abuse, moral behaviour, violence, mental health, suicide, body image, among others. The aim was to identify the causes of ill-health in the adolescent. The authors were successful in providing a broad understanding of the factors affecting adolescent health in the English-Speaking Caribbean.

The articles in this issue show that despite the different health problems, the policy approaches are similarly embedded in many sectors that must work interactively to achieve maximum and sustainable benefits from the limited resources available.





Poverty, Food Security and Globalization: Challenges for Regional Development^a

Ballayram^b

INTRODUCTION

While some consensus exists in the literature on key conceptual and substantive dimensions of globalization, there are ongoing intense debates and strongly divided views on its benefits and risks. Critics maintain that globalization has exacerbated poverty and inequalities in developing countries. On the other hand, proponents argue that the process has accelerated market reforms and economic liberalization and now brings unprecedented opportunities to billions of people throughout the world. The debate on globalization must be encouraged, because so much is still uncertain about the process, especially its potential impact on different groups in the population.

In the Caribbean, poverty and food security within the context of the globalization process require urgent attention. Poverty levels in the region are still at unacceptably high levels,

and food security is being compromised by individual choices, poverty, income inequality, and the changes that the region are undergoing, including the globalization process. Two articles that appeared in earlier publications of this journal addressed aspects of these issues. Antoine (2000) posed food security within the context of trade liberalization as a legitimate non-trade concern for CARICOM in its negotiations at the international level on regional agriculture and trade, while Ballayram (2002) discussed the conceptual and several other key dimensions of globalization aiming towards an understanding of the process.

This paper contributes to the ongoing dialogue by:

- articulating the links between globalization, poverty and food security;
- discussing the implications of these links within the context of Caribbean reality; and

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- providing a perspective on how to shape and respond to globalization in order to enhance food security and alleviate poverty in the region. Following this introduction, Section 1 briefly discusses some background information on poverty and food security in the region; Section 2 presents a conceptual framework that links globalization, poverty and food security; Section 3 discusses the poverty, food security and globalization nexus and identifies some policy challenges for regional development and finally, Section 4 distills the main issues raised in the paper.

Poverty and Food Security in the Caribbean

Despite considerable economic progress in post-independence Caribbean, poverty and inequalities in income and access to resources are at unacceptably high levels and continue to be major challenges in this region. Carlson (1999) identifies these twin problems as key factors that have constrained growth and development in the Caribbean. The estimates of poverty reported in Table 1 for several Caribbean countries show that the percentage of persons living under the absolute poverty line* varies widely among the countries, ranging between

Table 1: Households' Poverty Indicators for Selected CARICOM Countries

Country	Year	% Below Absolute Poverty Line	% Below Indigence Poverty Line	Gini Coefficient
Barbados	1997	13.9	na	0.39
Belize	1996	33.0	13.4	0.51
Grenada	1999	32.1	12.9	0.45
Guyana	1999	35.0	19.0	0.38
Jamaica	2001	16.8	na	0.37
Nevis	2000	32.0	17.0	0.40
St. Kitts	2000	30.5	11.0	0.50
St. Lucia	1996	25.1	7.1	0.56 (1995)
St. Vin't/Gren adines	1996	37.5	25.7	0.42 (1995)
Trinidad/Tobago	1992	21.2	11.2	0.37
Turks/Caicos	1999	25.9	3.2	0.38

Source: Thomas and Wint (2002).

*The indigence poverty line (IPL) is a culturally accepted and nutritionally adequate diet for a family of four, based on the lowest market cost for a 2400 caloric requirement for adults and 720 calories for children under 12. The absolute poverty line (APL) = IPL plus other basic non-food requirements (e.g., education, health, transportation, housing, etc). A household is considered poor if its expenditure is less than the APL.

16-34 percent. These are national averages, with higher rates in rural areas.

Closely related to poverty is the issue of inequality. Recent research shows that reducing inequality can actually reduce the number of households in poverty but that efforts to achieve this goal through growth must be complemented by policies to reduce inequality (Cornea and Court, 2001; Ralph van der Hoeven 2000). A standard measure of inequality is the Gini coefficient, which ranges between 0 (absolute equality) and 1 (one person/household receives all the income). A Gini coefficient above 0.40 is considered to reflect a high level of inequality (Cornea and Court, 2001). The Gini coefficients reported in Table 1 show that five countries have high levels of income inequality, while the other countries follow closely. Thomas and Wint (2002) argue that these levels of inequalities are among the highest in the world.

The concept of food security, discussed in-depth elsewhere (UN ACC/SCN, 1991; Antoine 2000), is posed as an integral part of a process of nutrition and health development that embodies several major components – food availability, household access, nutritional adequacy, sustainability and vulnerability. For purposes of this discussion, two issues bear relevance to regional food security. First, the region is under threat of

losing one of its principal sources of food security, viz., preferential markets for its traditional agricultural commodities. Moreover, the position currently taken by the developed countries for unilateral tariff reduction in developing countries, while refusing to compromise on subsidies and other forms of protection accorded to their own agricultural sectors, will also have negative repercussions for regional agriculture and development. In particular, domestic support, market protection and export subsidies for agriculture in the developed industrialized countries are displacing agricultural production in developing countries. In the Caribbean region this is an important issue that has to be addressed. For some of these countries, the rural economy is the main source of livelihood for more than 30 percent of the population and contributes in excess of 20 percent to national income and foreign exchange earnings (FAO, 2002).

Secondly, while food balance sheets indicate that, generally, energy supplies from staples are above recommended population goals, the region is over-consuming fats, oils and sugars, and not consuming enough fruits and vegetables (FAOSTAT, 2003). This has bearing on the epidemiological transition, that Caribbean countries are undergoing. In this regard, nutrition-related chronic diseases such as obesity, diabetes, high blood-pressure, stroke, heart diseases

and cancer have replaced malnutrition and infectious diseases as the major public health problems. These chronic diseases already account for two-thirds of the mortality in the Caribbean; about 50 percent of these deaths are premature in persons less than 65 years of age. These observations point to a major element of food insecurity in the region, namely the failure of the food system to meet nutritional and health requirements of the population, and underscore the need to go beyond the supply side of the food security equation and address demand side issues.

The observations raised in this section suggest therefore that the main problems of food security in the region border on lack of access due to high levels of poverty and inequality in income and wealth, prevalence of nutrition related chronic diseases, and within these contexts, on individual choices. The extent to which globalization exacerbates these problems will be addressed in the following sections of this paper.

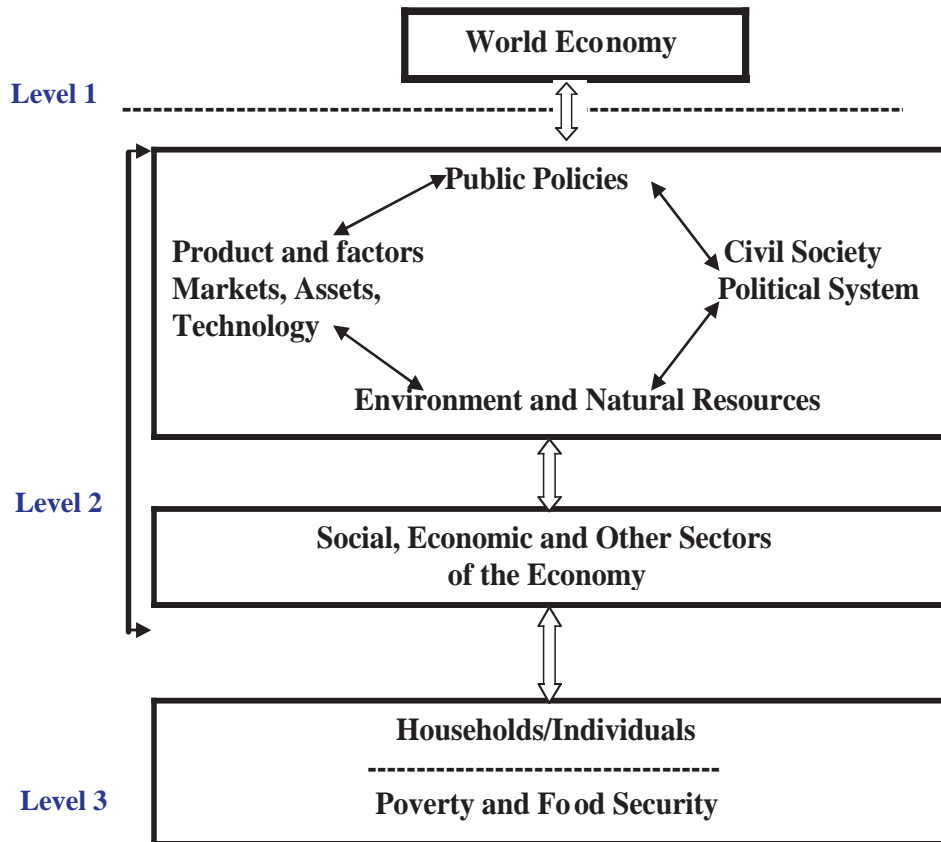
Conceptual Framework

Trade expansion, fueled by liberalization and other economic reforms, is sometimes taken to be the central component of globalization. However, the literature on globalization cogently demonstrates that the process is much wider than this. In

particular, globalization has intensified multiple forms of social, economic, political and cultural linkages among peoples, institutions, organizations and nations, regardless of the part of the world they exist, and at an unprecedented speed and intensity. This more encompassing view of globalization is conceptualized in Figure 1, which presents a framework that links the globalization process to poverty and food security (see Diaz-Bonilla, E. and S. Robinson, 2001, for a more elaborate treatment of these links).

In this framework, poverty and food security form a subset of a wider context in which global changes act out on national, household and individual settings. At the first level, the different dimensions of globalization are captured in the world economy. These include, inter alia, foreign capital, investment and technological flows, trade in goods and services and legal, institutional and regulatory rules and obligations on trade, environmental, health and other matters of international importance. These combine to exert significant influence at the second level comprising governments, the political and judicial systems, civil society, and national factor, financial and product markets. At this level the influences are mostly channeled through line ministries. Finally, the filtered effects of the different dimensions of

Figure 1: Globalization, Poverty and Food Security Linkages



Adapted from Diaz-Bonilla and Robinson, 2001.

globalization affect poverty and food security by impacting upon household and individual livelihood assets, redistribution policies and the institutional environment.

This framework highlights the importance of global factors on the final outcome of the nexus of inter-relationships between poverty, food security and globalization. Indeed, globalization, the development litera-

ture recognized that the overall functioning of the world economy exercised a major influence on growth and general living standards in developing countries. For example, in the 1960s and 1970s, the primary commodity price booms, high growth and negative real interest rates in industrialized developed countries, contributed immensely to growth in Latin America, the Caribbean and Africa. However, in the 1980s, the

collapse of prices for primary products, quadrupling of oil prices, and recessions in the industrialized economies, were major factors leading to slow and/or negative growth in developing countries, deterioration of living standards and consequently to the need for financial and structural adjustments.

Poverty, Food Security and Globalization

There is a growing body of literature that maintains that, given the inter-relatedness of the elements that link poverty, food security and globalization, future gains arising from this nexus will depend on how effectively developing countries can shape the globalization process as well as design effective policies to address their development needs (*Dias-Bonilla et al, 2000; Khol and O'Rourke, 2000*). One main area of controversy in the debate on globalization is whether export expansion through trade liberalization – one empirical expression of globalization – will impact negatively on poverty and food security in the region. The argument is that scarce resources among small farmers will constrain their effective participation in the new expanding markets, with adverse consequences on incomes and rural livelihoods. In particular, the anxiety is that if relative prices shift against the poor (i.e., if the price index of agricultural output is

significantly lower than the price index of non-agricultural products), or if the already established status quo (i.e., large land owners, national and multinational agricultural enterprises) is reinforced and is able to benefit more from the trade expansion, then this will allow them to extract income from the poor and adversely compromise their livelihoods. Part of this argument also is that if export production displaces traditional staple crops, this too will negatively impact on food security.

These arguments are similar to those directed at the Green Revolution and the commercialization of agriculture. However, analyses have shown that while the benefits of the Green Revolution have not been uniform, and that indeed some small farm producers were negatively affected, that complementary policies are needed to offset or prevent these outcomes by creating an enabling environment conducive to continued economic activities beneficial to the poor and marginalized groups. With respect to globalization, several studies have found that domestic policies explain a larger proportion of the variation in income inequality in developing countries than economic openness (*Khol and O'Rourke, 2000*). Additional empirical evidence has found that the interventions allowed without restrictions under the World

Trade Organization's Agreement on Agriculture (AOA) e.g., research, extension, infrastructure, irrigation, marketing – are the real foundations for increases in production, productivity and competitiveness (Dias-Bonilla, et al, 2000).

These observations point to several major policy challenges for the region. In particular, policies have to be designed and implemented to:

- increase the physical and human capital owned by the poor and women;
- maintain existing and build new infrastructures to ensure that markets operate competitively; and
- eliminate institutional, political, and social biases, including the traditional policy bias against agriculture, that discriminate against the poor. Indeed, the importance of these complementary policies have been recognized as early as the Moyne Commission (1945) and later by many researchers on Caribbean development as one of the main sets of constraints to regional development in general and agricultural development in particular.

The points raised in the last paragraph should not be construed to mean an uncritical acceptance of globalization or a denial of the negative effects attributed to it. Most of the concerns of those who oppose globalization are legitimate and greater efforts have to be expended by governments and international institutions to assist those who lose out from the process. However, all indications are that this current wave of global changes will continue into the future.* Several reasons can be advanced for this (Deardoff and Stern, 2000):

- Research has not yet shown that the costs of globalization outweigh its benefits.
- Most informed judgments would not have a return to the protectionist eras.
- So far the costs of globalization are mostly adjustment costs and a reversal will entail analogous costs.
- Finally, it is conceivable that since the world has come so far forward in attaining global and efficient markets, a continuation along the same path might well be less painful than what has been experienced so far.

* *It is conceivable that despite the current momentum of globalization, it can be stopped as it did during the two world wars and the great depression, or suffer reversals through intense oppositions, as the setbacks to the WTO (the most visible protégé of globalization) in Seattle in 1999, and in Cancun in 2003 clearly demonstrate.*

To the extent that globalization will continue into the foreseeable future, then policy-makers must find ways of optimizing on the opportunities and minimizing on the risks, that are attributable to it. In this regard, and in the context of the concerns raised in this paper, one of the most urgent tasks of developing countries is the need to address the continued agricultural support in, and subsidized agricultural exports from, developed countries. Some indications of the impact of this agricultural support regime on Caribbean economic reality can be gleaned from available evidence. Since the 1970s several studies have consistently reported that agricultural surpluses generated under protective and subsidized regimes in the United States, the European Union and other OECD countries and dumped onto world markets have proved detrimental to developing countries. It has been estimated that these policies have displaced about US\$40 billion in net agricultural exports per annum from developing countries and reduced incomes in these countries by about US\$30 billion per year (Watkins and Braun, 2003). This is particularly instructive for Caribbean countries where the majority of the poor live in the rural areas and survive as small farmers, artisans, and unskilled labourers. Hence, any displacement of agriculture in the region constrains the sector's role as a powerful catalyst for

enhancing food security and reducing poverty and income inequality.

Conclusion

Three important conclusions emerge from the above discussion. In the first place, as globalization continues to gather momentum Caribbean policy-makers face a major challenge to recognize and comprehend this historical conjuncture as a major imperative to any decisive advance to addressing the region's pressing problems with poverty and food security. If these changes are not fully understood and incorporated into policy formulation, then the opportunities for meeting regional food security and reducing poverty will be not be optimized. It is therefore necessary for policy-makers to engage in the debate and dialogue regarding the impacts of globalization.

Secondly, rural development and agriculture in the region must be given priority. This derives not only from the significant contribution these sectors make to national income, employment and foreign exchange earnings, but more importantly, because for most countries in the region about a third of the population lives in rural areas and depends directly or indirectly on agriculture.

Thirdly, food security is compromised by poverty and inequality. Policies are therefore needed not only

to increase production and productivity, but must ultimately aim to increase incomes, reduce poverty and inequality and enhance health in the rural economy and wherever poor and marginalized groups live.

Finally, in the context of globalization and new rules on agricultural trade, regional governments must find ways to reduce the costs to those who are harmed by globalization. Additionally, they must be proactive in seeking special dispensations – in addition to those allowable under current WTO Rules – in international negotiations as their economies become more integrated into the globalization process. These are legitimate demands in light of (i) the nature and historically conditioned structure and functions of these economies; and (ii) the continuing support and protection by industrialized developed countries for their agriculture.

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A farmer cultivating cabbage.

Breastfeeding and Globalization: *Implications for the Caribbean*^a

Fitzroy J. Henry^b

The theme of this year's launch cannot be more appropriate or timely in light of the dramatic collapse of the WTO talks on globalization a few days ago. But first – breastfeeding. We now know from cumulated research that almost all women can successfully and safely breastfeed exclusively up to six months. We also know the superiority of breastfeeding in terms of its nutritional, immunological and possibly behavioural benefits to the infant. We also know the important benefits of breastfeeding to the mother. But this paper will not be discussing the indisputable advantages of breastmilk and breastfeeding. It will focus on the threats and the opportunities for breastfeeding in our globalized world.

In Jamaica almost all mothers (98%) breastfeed at birth. However, by six weeks more than half stop breastfeeding exclusively,¹ even

though they can do so safely up to 6 months. There are several explanations for this trend, but I wish to remind ourselves of the key one. Breastfeeding is robust, strong and very resilient in various biological conditions, however, in the face of inadequate sociocultural support, breastfeeding is fragile. Let me explain: breastfeeding can be very successful and for long duration whether the mother is well off and lives in the exclusive areas or whether she is poor and lives in the inner city. What makes a mother breastfeed is not where she lives, but her exposure to positive and negative social, cultural and economic influences and how she reacts to them.

Yes, we have to continue informing mothers and potential mothers about the value of breastfeeding. But if we seriously want to reverse that decline in breastfeeding rates from birth to six months, we have to do

^aPresented at the National Launch of Breastfeeding Week 2003 in Jamaica under the theme "Breastfeeding in a Globalized World for Peace and Justice".

^bDr. Henry is Director, CFNI.

more than that. We must first identify those factors which create conditions for inadequate sociocultural and economic support which could be a threat to the practice of breastfeeding and globalization presents one such scenario.

GLOBALIZATION

Globalization is the increasing interconnectedness of people and nations through economic integration and communication. One stated intention is to impose rules of free trade and free financial flows throughout the world.

Caribbean countries have open economies and agreements such as the Free Trade Area of the Americas (FTTA) and the Caribbean Single Market and Economy (CSME) are expected to reform our economies in keeping with the imperatives of globalization. There is concern, however, that the region is entering these agreements at a time when our technological capacity and level of competitiveness cannot match the requirements of a fierce-trading globalized world.

Globalization through free trade is expected to create prosperity, peace and justice throughout the world. But free trade is not necessarily fair trade. Many people around the world are disgusted with the obvious loopholes in the key principles of globalization and they are expressing it in forceful and often violent ways. The late

Jamaican reggae star Peter Tosh said “I don't want no peace, I want equal rights and justice” meaning of course that if you get equal rights and justice first then peace will eventually follow. It seems Peter Tosh's sentiments resonated among the demonstrators at the globalization meeting in Cancun in September. There was one suicide and several mass protests outside and inside the meeting which led to the abandonment of the talks. We all recall the previous violent clashes between protesters and police in Seattle, Prague and Genoa – now Cancun. And it will continue every year. And why? Because the benefits of globalization are not evenly shared and there are too few winners and too many losers in the process. For us in small Caribbean states this is particularly true, as we cannot compete effectively with subsidized products of larger economies.

Now you may ask – what has this got to do with breastfeeding? On the surface – it may appear to be little. But as we examine the impacts of globalization, the effects on breastfeeding become more pronounced and more profound.

In this globalized environment:
the need for economic gain puts profits before people – a major concern for the social sectors such as health.

In this globalized environment:
the needs of mothers and children are easily jeopardized.

In this globalized environment breastfeeding-friendly practices can be lost, while the commercialization of infant feeding practices through breastmilk substitutes becomes the norm.

In this globalized environment, therefore, we must be vigilant.

So what should we watch for? Generally, trade agreements should not be used as an excuse not to develop and enforce national infant feeding policies which cover exclusive breastfeeding, indigenous complementary foods and the labeling of infant foods and food safety standards. We must ensure that the globalization process through agreements such as: WTO – a global process, FTAA – a hemispheric process which starts in 2005 and the CSME – a Caribbean process which is already with us, do not supersede the international code of marketing of breastmilk substitutes. In recent years the baby food industry has attempted to mislead people to think that the Code is no longer valid. Now with globalization one can easily see how the Code can be further manipulated and interpreted as a restriction on the rights of formula manufacturers to compete freely in the market place. The relevant clause in agreements refers to “trading in like products”. Breastmilk cannot and should not be compared with infant formula as a “like product” hence any such WTO agreements cannot and should not stand. Furthermore, we should

remember that there are provisions which allow governments to put aside trade agreements in order to protect the health of consumers. These need to be explored vigorously. We note the ruling in September by the WTO which, for health reasons, allowed the local manufacture of essential drugs which could make them cheaply available in developing countries. Breastfeeding should be protected by similar rulings in trade talks.

COMMUNICATION THROUGH GLOBALIZATION

Through globalization the world will be much more interconnected. We note that internet connections and email have helped to link up the breastfeeding committees across the region and the world providing instant access to various advocates. Breastfeeding networks can find new and creative ways to ensure that infant and child health is protected through appropriate feeding practices. Global communication, therefore, has the potential to educate people on the importance of breastfeeding, appropriate complementary feeding and the health risks of artificial feeding. The potential certainly exists, but the reality in the Caribbean is that few such programs are aired. The truth is that we see the flooding of our airwaves with the enticements of breastmilk substitutes. The infant food companies have infinitely more resources to have their products and persuasions reach the public. So while

globalization will allow free trade and free access to the media by anyone, in reality only those who can afford it will reach the public.

GLOBALIZATION, WORK AND BREASTFEEDING

Turning briefly to the workplace, we note the chief reason why breastfeeding mothers are not adequately protected by employers is because of the need to maximize the time at work in productive activity. But there are also other reasons. In Jamaica, where 44% of households are headed by women, a study in 1991 showed although mixed feeding was introduced early, still more than half of the infants were still breastfeeding at one year of age. There was remarkable similarity in infant feeding practices between employed and non-employed mothers suggesting that cultural and other sources of maternal support also play important roles.²

At the workplace managers are ever so aware of the fierce economic competition in the marketplace and ultimately, therefore, profits come before people. And this will increase as globalization intensifies. It is unfortunate that the protective effect of exclusive breastfeeding on infant health is greatest during the precise period when women are most likely to abandon this behaviour. In this increasingly globalized world, how can we get businesses in both the public and private sector to provide

adequate leave, safe working conditions before and after childbirth, freedom from discrimination and remove the fear of losing her job?

I have two specific recommendations to offer:

1. Make the case in financial terms; and
2. Insist that three essentials are in place.

Making the Case in Financial Terms

In the old days breastfeeding, with its undeniable benefits, was regarded as a social good and that was enough to obtain commitments and resources to promote and protect breastfeeding. In today's globalized world, dominated by finance and economics, almost every investment needs to be justified by "value for money". Today we need to go beyond the cherished virtues of breast feeding and make the case for breastfeeding in monetary terms. And we do have a strong case to make.

At the national level there can be savings in reduced expenditure on formula, lower net food cost to households and lower overall health care costs. In the US in 2001 it was estimated that increasing breastfeeding at 6 months from 29% to 50% could save a minimum of \$3.5 billion, most of it attributable to preventing premature deaths.³ In Jamaica in 1991 the cost of feeding a 3-month old

infant which included cost of formula, bottles, cooking pot for sterilization and fuel was estimated and the total cost expressed as a percentage of monthly salaries. So, for the minimum wage worker, the cost of feeding this 3-month old was 90% of salary. For a community health aide it was 78%, a clerk 36%, a teacher 26% and a registered nurse 22% (4). That was 12 years ago. It is important that those estimates are redone and the costs versus the benefits of breastfeeding be calculated at the family and at the national level. I have little doubt that a strong case can be made for public and private sector entities to invest in this practice not only to benefit the health of the worker and her child but also to benefit the financial health of the company – through less health care costs of the family and fewer days away from work to care for the child.

Insist on the 3 Essentials

It is not known what globalization will bring to the Caribbean but regardless of its full impact, positive or negative, we must be prepared. If we wish to improve the breastfeeding rates during those critical first months of infancy, we must insist that three essentials are in place – time, space and support.

Time

Breastfeeding requires time of the mother – provided mainly by the family, and when the mother also is

employed outside the home, by her employer. Employers often impose time constraints which have marked negative impacts on breastfeeding success because of adverse effects on suckling and milk production. Employment policies also need to recognize the importance of adequate maternal leave, (and paternal leave). Arrangements for temporary part-time employment of the mother should not adversely affect her full-time employment opportunities later.

Space

A mother should feel comfortable and confident in the available space she has to breastfeed. It is not often that we see women in the Caribbean expose a part of their breasts to feed in buses or other public places. One could conclude that our women are shy and modest. But it is interesting to note that, with our rapidly changing dress code, much more of those same breasts, and other parts of the anatomy, are revealed readily – in public places, at shows, and other venues of entertainment. If a woman wanted to display her breasts in public, I would have thought that breastfeeding would have been a most legitimate and acceptable reason to do so. But that seems not to be the case.

Despite this pattern, I still argue that venues should be more conducive to breastfeeding for those mothers who wish to do so. I refer to places of employment, worship, business and

entertainment. Why should a mother who wishes to breastfeed feel that she cannot go to church or a fair because she needs to stay home to breastfeed in privacy and comfort?

Support

For an infant to obtain the full benefits of breastfeeding there should be safe and adequate food for the mother; complementary infant foods for the period of mixed feeding and fair labor compensation that recognizes the need of families. Other forms of support center around interventions by government, business, community, health professions, and educational and research institutions.

Earlier I dealt with the need for government to introduce the required laws to protect and promote breastfeeding. I also dealt with business houses and the need for adequate parental leave and adherence to the Code.

But one issue which cuts across the various support systems relates to what is the generally expected mode of feeding babies and infants. How many young and teenage girls plan to breastfeed exclusively for six months and continue feeding breastmilk for at least one year? This is a critical question because it speaks to a fundamental aspect of our culture and tradition. The implication from this question is that we cannot wait until pregnancy before we start talking with mothers about the

benefits of breastfeeding. This process has to start early in our education system and reinforced in churches, clubs and other such institutions until it becomes an understood and accepted way of life. Here is where we as health professionals need to further our outreach programmes. Here is where we, as researchers, have to find out why our new mothers might not want to breastfeed and what can be done to break those barriers.

The characteristics of globalization impose a special responsibility on all of us in the Caribbean to safeguard breastfeeding and the well-being of women. We can do this by assuring access to a safe and adequate food supply throughout the life cycle and the provision of adequate time, space, and social, cultural and economic support to women and their families.

This challenge is indeed great but our resolve must be even greater.

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Child Malnutrition and the Relation with HIV/AIDS in Jamaica

Sarah Jones^a

In the last two decades, Jamaica has taken great strides in eliminating severe malnutrition in the majority of its population. In fact, like many of the Caribbean countries, Jamaica's health concerns are transitioning towards an increased prevalence of diet-related chronic diseases¹ where the concern lies more with inappropriate food intake rather than an insufficient intake. Key indicators of malnutrition (reports of low birth weight babies, underweight, stunted, or wasted children) continue to decrease each year, yet the public health services responsible for such declines rely on an economy which may not be able to support intensely targeted nutrition policies and programmes in the future, particularly with the threat of HIV/AIDS looming throughout the Caribbean.

CHILD MALNUTRITION

Traditionally, those most vulnerable to malnutrition were those least able to gain access to economic or social

resources. Jamaica's Public Health system, supplemented by private sector and NGO projects, has implemented numerous programmes designed to reach out to the underserved communities, both facility and community based. These include the Food Stamp Programme, PATH, the School Feeding Programme, Nationwide Food Fortification, Breastfeeding Promotion Programmes (including the Baby Friendly Hospital Initiative), the training/implementation of Community Health Aides, and structured antenatal and nutritional educational/counseling programmes. The prevalence of malnutrition, in children ages 0-59 months, held steady at around 16% from 1975-1985, however the following table² shows the most recent published numbers:

Malnutrition in Jamaica occurs most frequently in households of the unemployed, among subsistence farmers in rural areas, in the lowest urban areas, in large families with no paternal support, and among very young mothers. The population most at risk

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^bFAO – Nutrition Country Profiles (Jamaica). 2002. pg. 6.

Region	Underweight < -2 SD	Stunting < -2 SD	Wasting < -2 SD
Kingston Metro Area	4.3% (11.9%)	5.1% (7.3%)	2.4% (3.7%)
Other Towns	2.7% (5.3%)	3.9% (6.8%)	3.0% (2.6%)
Rural Areas	3.7% (4.2%)	5.0% (5.1%)	2.3% (2.5%)
National	3.6% (6.4%)	4.8% (5.9%)	2.4% (2.8%)

continues to be children ages 12-23 months. The consequences of nutritional deprivation range from the immediate to the long-term, and most certainly affect the future of a country. Children diagnosed as suffering from malnutrition often have a low IQ and impaired cognitive development, when compared with their counterparts. Often these children have difficulties in education achievement and are seen to have lower than normal enrollment rates, as well as higher drop-out rates. Malnourished children often suffer from a failure to thrive, with increased morbidity and mortality rates and small adult body types. Combining cognitive and physical deficits creates both social and economic problems in the long-term, as malnourished children have decreased mental and physical capacity as adults. Often this is reflected in a decreased work capacity, which not only affects households (both economically and emotionally), but the economics of the country as a whole.

Malnutrition in Jamaica occurs most frequently in households of the

unemployed, among subsistence farmers in rural areas, in the lowest urban areas, in large families with no paternal support, and among very young mothers. The population most at risk continues to be children ages 12-23 months. The consequences of nutritional deprivation range from the immediate to the long-term, and most certainly affect the future of a country. mically and emotionally), but the economics of the country as a whole.

RISK FACTORS

In 1990, UNICEF developed a conceptual framework regarding the consequences of malnutrition, and divided the causes into three categories: basic, underlying, and immediate. For many years, much attention was given to the most prevalent immediate problems, disease and inadequate dietary intake. However, these issues are not occurring in a vacuum. To deal with child malnutrition, it was necessary to understand the background issues causing the deficiencies in health and food.

On a contextual level, child malnutrition is a result of the political and economic structure of a country. It is on this basic ground that potential resources are organized and allocated into an ideological structure to serve the citizens. Underlying causes stem from the chosen structure of human and economic resources. If a child is suffering from disease or a micro-nutrient deficiency it can be assumed that the child is subject to an insufficient health system, inaccessible food supply, and an unhealthy environment. There could be multitudes of reasons for these inadequacies, but in most cases they stem from poverty. Impoverished households are of low-income, have limited access to health care, may be uneducated in health care practices, and often have unstable supplies of clean water and good sanitation.

HIV/AIDS

In 2001, it was estimated that the adult prevalence of HIV/AIDS in Jamaica was 1.2% of the population (both men and women) ages 15-49.⁵ Reported AIDS cases have increased

from 1 in 1982 to 445 in 2001, with a peak of 892 and 903 in 1999 and 2000, respectively.⁶

Though the estimated number of children (ages 0-15 years) living with HIV/AIDS in 2001 in Jamaica was 800, the estimated number of children who had lost their mother, father, or both parents to AIDS was 5,100 (2001).⁷ This number pales in comparisons with the AIDS orphans in countries such as Africa, but these are living children who are now vulnerable to many of the same risk factors that are seen to underlie malnutrition. The prevalence of HIV/AIDS in Jamaica is currently below the Caribbean average of 2%, but the country is not isolated from the fact that the Caribbean has the highest incidence of new cases in the Americas.⁸ The World Bank identified seven unique attributes to the disease⁹:

- HIV/AIDS spreads very fast.
- People who contract HIV may remain infectious for many years without knowing they have the virus or showing any symptoms. The potential for spread is high.

⁵UNAIDS/WHO *Epidemiology Fact Sheet on HIV/AIDS and Sexually Transmitted Infections, Jamaica. 2002 Update.*

⁶*Ibid.*

⁷*Ibid.*

⁸[http://wbln0018.worldbank.org/LAC/lacinfoclient.nsf/0/0191899ca02a3f6885256905007be3d0/\\$FILE/HIVAIDSCaribbean.pdf](http://wbln0018.worldbank.org/LAC/lacinfoclient.nsf/0/0191899ca02a3f6885256905007be3d0/$FILE/HIVAIDSCaribbean.pdf)

⁹*Ibid.*

- It reduces life expectancy which is positively related to savings, productivity, and education.
- HIV/AIDS primarily affects young people, ages 15-49, who are in the prime of their lives as workers and parents.
- People with AIDS suffer repeated and prolonged illnesses, imposing great costs on households and health systems.
- AIDS breaks down social cohesion, challenges value systems, and raises deeply rooted and sensitive gender inequalities.
- There is no AIDS vaccine and no cure.
- Understaffing – like any social projects, Jamaica's programs to reach underserved communities are constantly at the mercy of available funding. Particularly labour and time-intensive are the Community Health Aide projects, which are invaluable in creating links and communication within the community.
- Insufficient resources and distribution network for supplementation programmes – often when patients are seen at the clinic, there are shortages of the necessary nutrient supplements. This can leave clients with a sense of frustration, as they have been educated as to what they need, and shown where their needs can be met, yet they leave empty-handed and at a loss.
- Underutilized programmes and inadequate targeting – Jamaica has many programmes targeted to preventing child malnutrition yet only a fraction of the population knows or takes advantage of these situations.
- Unidentified malnutrition pockets – it is known that only certain localized areas in Jamaica continue to suffer from severe malnutrition, though the nation as a whole continues to improve.

Of these seven factors, four are related to both economic and social systems. If Jamaica is required to transfer human and capital resources to fight HIV/AIDS in the future, what will be the expense to the community health systems that have worked so well for the past twenty years in deterring malnutrition?

IDENTIFIED PROGRAMME GAPS

Having discussed the fact that Jamaica has done an excellent job in developing a successful public health sector, there are some issues that garner review.

Possible Recommendations

Based on the CFNI/Tulane University Study Tour of the Jamaican Public Health System, the following recommendations are put forth for consideration:

Continued and improved mapping of malnutrition pockets – surveillance and monitoring in these areas will lead to a better analysis of the community level situations and more appropriate interventions.

- Further research on the HIV/AIDS issue in Jamaica and the disease's affect on the affected populations.
- Improved monitoring and evaluation of nutritional programmes – each programme has its individual goal and target population to reach, but a thorough process of M and E will allow public health officials to accurately review programme procession, efficiency, and necessity.
- Strengthening of the health care referral system for clients with HIV/AIDS.
- Integration of social workers within the community of public health nutrition workers for a more holistic approach.
- Continued expansion of the Parish AIDS committees.
- Increases in the number of Community Health Aides, and an

increase in the number of workers who are educated on HIV/AIDS.

- Integrated health information systems.
- Proper targeting of the school feeding programme – in 2001, school lunches and snacks accounted for 33% of reported school related expenses, and “school expense” being the most commonly cited reason for children's absence from school. To have the school feeding programme properly targeted and then utilized would provide benefits beyond the nutritional.
- Integration of research, policy, and programme implementation.
- Formation of public/private partnerships to support the work of the Child Development Agency (CDA).



Source: *Healthy Eating for Better Living*

Free School Meals and Children's Social and Nutritional Status in Trinidad and Tobago

Mc Gulliford^a, D. Mahabir^b, B. Roche^b, S. Chinn^a and R.J. Rona^a

ABSTRACT

Objective: To evaluate the provision of free school meals in Trinidad and Tobago in relation to children's social and nutritional status.

Design and methods: Cross-sectional survey of a nationally representative sample of 66 government schools, including children in the admissions classes (aged 4 to 7 years) and classes for 'rising nines' (aged 7-10 years). Data included questionnaire details of free school meals and children's social background, and measurements of children's heights, weights and skinfold thicknesses.

Results: Of 6,731 eligible children, data were analysed for 5,688 (85%). There were 2,386 (42%) children receiving free meals provided at school. At different schools the proportion of all children receiving free meals ranged from 20% to 100%, $P < 0.001$. Receipt of free meals was associated with larger family size (one child, 32% received free meals; 6 children, 63%), lower paternal educational attainment) primary, 52% free; university, 30%), father's employment (employed, 39% free meals; unemployed >12 months, 50%) as well as maternal education and employment and household amenities. After adjusting, for age, sex and ethnic group, children who received free meals were shorter [mean difference in height standard deviation score (SDS) -0.12, 95% confidence interval (CI) -0.17 to -0.0; lighter (body mass index SDS -0.21, -0.28 to -0.14) and thinner (subscapular skinfold SDS -0.13, -0.18 to -0.09)].

Conclusions: Free school meals were widely available, with some targeting of provision to children with less favourable social and nutritional status. Greater universality would reduce inequity, but more stringent targeting and reduction of school-level variation would increase efficiency.

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In the Caribbean, there has been a long-standing concern with the nutritional status of children. Sinha reviewed evidence from different English-speaking countries and reported that nutritional conditions had greatly improved over time.¹ Nevertheless, concerns continue to be expressed about undernutrition in socially disadvantaged sections of the population, particularly during periods of economic recession.² In response to these concerns, the government in Trinidad and Tobago has extended the coverage of free school meals in recent years. The programme covers all government and government-assisted (denominational) schools but not private schools. In total about 85,000 students receive meals in primary, secondary and pre-school classes. The programme is evolving and the ultimate intention is to reach all students. Meals provided by the school nutrition are free of charge, and are supplied daily. In primary schools, teachers select children for free meals using guidelines provided by the Ministry of Education. Selection is based on the employment status of the parents, the number of children in the family, and whether the child has a specific medical condition. In this report we aimed to evaluate the extent of provision of free school meals to different groups of children in relation to their social and nutritional status. The data were collected through a survey of a nationally representative

sample of government schools carried out by the Nutrition Division of the Ministry of Health during 1999.

METHODS

Subjects

The methods and main results of the study have been reported in detail elsewhere.³ There are 468 government primary schools in Trinidad and Tobago, 433 in Trinidad and 35 in Tobago. The sample of 66 schools was drawn by stratifying the country into health administrative areas and randomly selecting schools with probability proportional to size. The sample of schools was drawn by the Central Statistical Office for an earlier survey carried out in 1989.

The same sample was used for this survey because the geographical distribution of children in that survey corresponded closely to the distribution observed in the 1990 census. Fieldwork was carried out in the first six months of 1999. Within each school we measured all children in the first-year classes and in the classes for children aged 8 to 9 years.

Measurements

Measurements were made of children's heights, weights, and triceps and subscapular skinfold thicknesses. Height was measured on a Holtain stadiometer using the method

described by Cameron.⁴ Height was measured to the last 0.1 cm and 0.05 cm was added to correct the bias. Children were weighed in underpants with weight recorded to the last complete 100 g using electronic digital scales. Triceps skinfold thickness was measured as recommended by Tanner and Whitehouse⁵ but with the measuring point marked instead with the arm hanging straight and not bent. Fieldwork was carried out by the nutritionists and food demonstrators from the Nutrition Division of the Ministry of Health. Staff was trained in measurement techniques before the start of the study.

Questionnaires

The parents of each child were asked to complete a questionnaire. Where necessary, was interviewed – administered by a class teacher or a fieldworker.

The questionnaire included questions concerning whether the child usually ate 'breakfast', 'lunch' or any 'other food' (e.g., snacks) at school and, for each item, whether the food was provided free of charge. For analysis we combined responses to these items in order to determine whether each child received any free food at school or not. All meals provided by the government School Nutrition Programme are provided free of charge. Other meals would have been either brought to school or purchased from vendors near to the

school. Children receiving no food at school were presumed to go home for lunch but we did not collect this specific information, nor did we collect information about the children receiving drink but not food at school.

The child's ethnic group was classified into the categories 'African', 'Indian' 'White', 'Chinese', 'Mixed', 'Other' or 'Not known' based on parental reports. This represents a shortened form of the categorization used in the national census.⁶ For analysis the categories were further reduced to 'Afro-Trinidadian', 'Indo-Trinidadian', 'Mixed' and 'Other' and 'Not known'. The number of children in family was included in analyses as a categorical variable. The questionnaire also included items concerning the educational attainment and employment status of the child's parents, the type of water supply available in the home and the number of persons per room as an index of overcrowding. For analysis, these variables were reduced to the categories shown in the tables.

Analysis

A standard deviation score (SDS) was calculated for measurements of height, weight, body mass index (BMI) and skinfold thicknesses. The SDS is given by the difference between the child's measurement and the mean for a child of the same age and gender from a reference population divided by the standard

deviation for that age and sex in the reference population. Data from British children were used for reference. The height and weight SDSs⁷ and BMI SDS⁸ were calculated from the British 1990 growth references as recommended. Data for white children from 1990 survey of the National Study of Health and Growth (NSHG) constituted the majority of the data for ages 5 to 11 years, and data from other surveys were adjusted to that of the NSHG English data.⁸ No concurrent UK reference curves for skinfold thickness were produced because of lack of data from studies other than the NSHG. SDSs have therefore been calculated directly from NSHG 1990 data for English white children. Reference curves for triceps and subscapular skinfold thickness were obtained using the method of Cole.⁹ By definition, each SDS had normal distribution mean of 0.0 and standard deviation of 1.0 for the English white 1990 population. In boys, one weight SDS is equivalent to about 1.9 kg at 5 years and 4.5 kg at 11 years. Eight outlying items of data were excluded because they appeared impossible (greater than 10 SDS or less than -10 SDS). The age distribution of the sample was clearly bimodal with a trough at 7 years. Children were therefore divided into two age groups – less than 7 years and 7 years or more – in order to examine the hypotheses in relation to age. School class ('admissions' or 'rising nines') was not entered on to computer, but would

generally be consistent with age group.

There was appreciable school-level variation, so random effects logistic regression models were fitted using the 'xtlogit' command in Stata.¹⁰ Random effects regression models (with school as the random effect) were used to estimate associations between height, body mass index or subscapular skinfold thickness and explanatory variables.¹⁰

Results

There were 6,731 eligible subjects in the sample. Measurements were obtained for 6,405 (95%) children, while both questionnaires and measurements were obtained for 5,688 (85%). After adjusting for age group, sex and observer-assessed ethnicity, there was only weak evidence that children who provided measurements but not questionnaire responses were slightly shorter (mean difference in height SDS - 0.06, (95%) confidence interval (CI) -0.15 to 0.03, P = 0.171) and lighter (mean difference in BMI SDS -0.06, -0.17 to 0.05, P= 0.279) than children who provided both measurements and questionnaire responses. The remaining analyses were confined to the 5,688 children who contributed both measurements and questionnaire responses. Parentally assigned ethnic group was used for analysis. In the younger age group, the median age (range) was 5.7 (4.4 to 6.9) years. In the older age group, the

Table 1: Proportion of Children Having Meals at School and Whether They were Free of Charge. Figures are Frequencies (% of Column Total)

	All Children (5688)		<7 years (2608)		≥7 years (3080)	
	Received	Free	Received	Free	Received	Free
Breakfast	287 (5)	179 (3)	119 (5)	71 (3)	168 (5)	108 (4)
Lunch	3,721 (65)	2,146 (38)	1,672 (64)	886 (34)	2,049 (67)	1,260 (41)
Other Food	1,294 (23)	460 (8)	609 (23)	224 (9)	685 (22)	236 (8)
Any Food	4,166 (73)	2,386 (42)	1,875 (72)	1,011 (39)	2,291 (74)	1,375 (45)

median age (range) was 8.6 (7.0 to 10.4) years.

Table 1 shows the proportion of children eating food in school, and whether they were receiving free meals. Overall, 4,166 (73%) children ate food at school, and lunch accounted for 3,721 (89%) meals in school. Free meals were received by 2,386 (42%) children, and lunch was provided in 2,146 (90%) cases. The level of provision was slightly higher in the older age group than in the younger. There was significant variation in the provision of free school meals among schools, with the proportion of all children receiving free meals ranging from 20% to 100% at different schools. The intra-class correlation coefficient for school-level variation (by analysis of variance, without adjustment for covariates) was 0.08 (95% CI 0.05 to 0.11). This variation was partly explained on a geographical basis, with schools in

Tobago (74%) having a higher level of provision than those in Trinidad (41%).

Table 2 shows the distribution of free meals according to children's social characteristics. Figures are frequencies (% of row total) and odds ratios (95% CI) from a logistic regression model adjusted for each of the variables shown. There was evidence that older, rather than younger children, and boys rather than girls more often received free meals in school, but the absolute differences between groups were small. There were no differences in the receipt of free meals in relation to ethnicity. There was a strong association between the number of children in the family and receipt of free meals, with a two-fold increase between one-child families and those with six or more children. Receipt of free meals was also associated with lower educational attainment in the father or mother,

with long-term unemployment of the father, with the absence of a pipe-borne water supply in the home, and with household overcrowding. There was only weak evidence for an association with maternal employment status. There was evidence of school-level variation ($P < 0.001$) even after allowing for variation in children's social characteristics between schools, and whether the school was in Tobago.

Table 3 shows the mean difference (95% CI) for anthropometric indicators between those who received free meals and those who did not. In these analyses, which were adjusted for age group, sex and ethnic group, children who received free meals were slightly shorter, thinner and lighter than those who did not. Comparing children who ate food at school that was not free with children who did not eat at school, there were no differences in mean height (SDS -0.02, 95% CI -0.09 to 0.05), BMI SDS (-0.02, -0.11 to 0.07), triceps skinfold thickness SDS (0.01, -0.05 to 0.07).

DISCUSSION

Main Findings

A high proportion of primary school children in Trinidad and Tobago received free school meals. Receipt of free school meals was associated with the child being from a larger family, with lower educational

attainment of either the mother or the father, with long-term unemployment of the father, and with fewer household amenities in terms of water supply and household over-crowding. Children who received school meals were slightly shorter, lighter and thinner than children who did not receive school meals. There was evidence of variation in provision among schools, even after allowing for differences in children's characteristics between schools. There also appeared to be different levels of provision of free meals in Trinidad as compared with Tobago.

Limitations of the Study

Our study had several limitations. We studied a large nationally representative sample of children, and the overall response rate was good. However, there is a concern that non-responding children may represent a particularly vulnerable group, especially as we did not trace children who were not registered in school. However, the proportion of children not enrolled in school would be a very small minority in Trinidad and Tobago. As the survey had a broad perspective, we only included a few simple questions about the meals taken at school. Future studies might usefully evaluate the intakes of children who do not receive meals through the school feeding programme, or who do not eat at school.

Table 2: Proportion of Children Receiving Free Food in Relation to Social Factors. Figures are frequencies (% of row total) and Odds Ratios ((95% CI) Adjusted for Each of the Variables Shown

		Free Meals/Total (%)	Odds Ratio (95% CI)
Age Group	<7 years	101112680 (39)	-
	≥ 7 years	13753080 (45)	1.18 (1.05 to 1.33)
Sex	Male	12102737 (44)	-
	Female	11762951 (40)	0.81 (0.71 to 0.91)
Ethnic Group	Afro-Trinidadian	8261934 (43)	-
	Indo-Trinidadian	7271689 (43)	0.91 (0.75 to 1.11)
	Mixed	7731794 (43)	1.19 (1.03 to 1.38)
	Other and Not known	60271 (22)	0.57 (0.38 to 0.84)
Number of Children in Family	1	241760 (32)	-
	2	5771661 (35)	1.09 (0.90 to 1.33)
	3	5161204 (43)	1.27 (1.03 to 1.56)
	4	396833 (48)	1.48 (1.18 to 1.85)
	5	266456 (58)	2.01 (1.54 to 2.63)
	≥6	328522 (63)	2.11 (1.61 to 2.75)
	Not Known	62252 (25)	0.79 (0.53 to 1.18)
Mother's Education	Primary	8311513 (55)	-
	Secondary	10232587 (40)	0.80 (0.69 to 0.93)
	Technical	3701056 (35)	0.77 (0.64 to 0.93)
	University	63224 (28)	0.73 (0.51 to 1.05)
	Not Known	99308 (32)	0.81 (0.57 to 1.15)
Father's Education	Primary	9171751 (52)	-
	Secondary	8402144 (39)	0.86 (0.74 to 1.00)
	Technical	303932 (33)	0.72 (0.59 to 0.87)
	University	79265 (30)	0.78 (0.57 to 1.08)
	Not Known	247596 (41)	0.99 (0.78 to 1.25)
Mother's Employment	Housewife/not employed	13622891 (47)	-
	In paid employment	7412071 (36)	0.91 (0.79 to 1.04)
	Not Known	283726 (39)	0.98 (0.79 to 1.21)
Father's Employment	Employed	15653966 (39)	-
	Unemployed	234456 (51)	1.18 (0.95 to 1.45)
	Unemployed >12 months	207352 (59)	1.58 (1.24 to 2.01)
	Not known	380914 (42)	1.24 (1.02 to 1.49)
Water Supply	Piped supply in house	12453457 (36)	-
	No piped supply in house	10171842 (55)	1.58 (1.38 to 1.81)
	Not known	124389 (32)	0.94 (0.71 to 1.26)
Overcrowding (persons/room)	≤1.0	4821529 (32)	-
	>1.0 to ≤1.5	5301357 (39)	1.07 (0.91 to 1.27)
	>1.5 to ≤2.0	6251321 (47)	1.31 (1.10 to 1.56)
	>2.0	6721176 (57)	1.46 (1.21 to 1.77)
	Not Known	77305 (25)	0.77 (0.54 to 1.10)
Island	Trinidad	22845551 (41)	-
	Tobago	10237 (74)	3.73 (1.68 to 8.30)

Comparison with Other Work

Meals are provided for children in school at reduced or no cost in many countries, with the intention of improving children's dietary intakes

and ultimately their nutritional status or educational performance.¹¹ Effects of school meal provision on dietary intakes have been demonstrated,¹² but studies in Britain since the 1980s have

generally shown that free meals or milk in school have a negligible effect on children's growth.^{13,14} In Jamaica, however, receipt of meals in school was associated with greater increases in children's height and weight over a 12-month period.¹⁵ Provision of meals in school was also associated with better educational outcomes, including improved attendance at school,¹⁵ and some evidence of better attention and cognitive functioning in class.^{11,15,16} These nutritional and educational benefits were particularly important for poorly nourished children from low-income families.^{11,15}

Evidence for the differential effectiveness of school meals in children who are less well-nourished provides support for a policy of targeting this provision to poorer families.¹⁵ However, when viewed as a social welfare measure, providing meals in schools acts a transfer to families with children.¹⁷ Here, the high degree of political acceptability of a benefit received directly by children may be as important as the immediate nutritional or educational consequences.¹¹ Targeting this form of provision has the apparent advantage of increasing the amount of benefit available to the poorest groups in society. A universal programme may be excessively costly. However, it is recognized that there are several disadvantages in targeting benefits in this way. Firstly, it may be difficult to implement a process of targeting

efficiently and it may be possible for the targeting to be subverted by the interests of particular groups.¹⁸ Secondly, there may be a stigma associated with the receipt of targeted benefits, which may limit uptake among those who are eligible.²¹ In Jamaica a policy of self-selection led poorer children to choose the less costly meal, while children who had money to spend on food were able to choose the more costly cooked meal.²² Thirdly, programmes that are aimed at the poor tend to attract few resources, or – as it is sometimes expressed – 'programmes for the poor are poor programmes'.¹⁸

In Trinidad and Tobago, the provision of free school meals was widespread but not universal. Although the basic policy is similar in the two islands, coverage tended to be more universal in Tobago (population approximately 50,000), but more selective in Trinidad (population approximately 1.2 million). There was some evidence of targeting at poorer children but, judged according to seven indicators of socioeconomic status, this was incomplete and there were only small differences in anthropometric measures between those who received benefits and those who did not. There was also wide variation in the level of provision among schools, even after adjusting for the characteristics of children attending them.

Finally, it may be noted that at the present level of economic development there is little evidence of

widespread undernutrition among children in Trinidad and Tobago. There is probably no excess of children with height less than -2 SDS but the prevalence of underweight is high especially in Indo-Trinidadian children.³ In data from the survey reported here, 8.5% of children were overweight and 2.4% were obese³ according to the international standard for obesity in children.²³ Current global trends are towards increasing obesity. In this context, schools have a potential role in encouraging healthy eating and exercise habits.²⁴ School meals often have a high fat content²⁵ but data reported to us by the School Nutrition Programme in Trinidad and Tobago suggest that their meals contain about 20% fat and 65-70% carbohydrate.

Implications for Policy

The results of our survey raise questions about the objectives and implementation of the school feeding programme in Trinidad and Tobago. The original aim of the programme was to address undernutrition but a broader focus on promoting health may now be more appropriate. The current pattern of provision illustrates some of the documented tensions between differing policy objectives in school meals provision.²⁶ Greater equity could be achieved by making provision more universal, as this would result in a higher proportion of children who need school meals actually receiving them. However,

this would reduce efficiency, as more children who do not need free meals would then receive them. Greater efficiency would be achieved by making the criteria for accepting children for free school meals more stringent, and by reducing variation in provision between schools. The present pattern of provision may to some extent represent a pragmatic compromise between these conflicting objectives.

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CAJANAQUOTE

....Q: "Should you continue to breastfeed the child with acute diarrhoeal disease?"

A: Yes, most certainly. Breast-feeding should be continued during diarrhoea. Studies conducted at the International Centre for Diarrhoeal Disease Research, Bangladesh, on children suffering from various kinds of diarrhoea have shown that intake of breastmilk remains quite satisfactory and absorption of nutrients (proteins, fats, carbohydrates, and diarrhoea. Continued breastfeeding during acute episodes of diarrhoea protects a child against severe reduction in calorie and protein consumption and helps prevent development of malnutrition. Moreover, by not interrupting lactation, the mother's milk output will not be jeopardized. Treatment during diarrhoea is frequently provided through oral rehydration solution. It has been seen that continued breastfeeding with oral therapy provides enough free water to prevent development of hypernatraemia (too much salt in the body). So, the most essential nutritional component of a diarrhoea treatment programme should be a message about the importance of continued breastfeeding during diarrhoeal illness."

From "Mothers and Children" 1 (2)

Spring, 1981

Adolescent Health in The Caribbean: A Regional Portrait^a

Linda Halcon, Robert W. Blum, Trish Beuhring, Ernest Pate, Sheila Campbell-Forrester and Anneke Venema^b

The last two decades have been marked by significant changes in adolescent health in Caribbean countries. There has been a shift from infectious to social morbidities caused or contributed to by individual risk behaviours and environmental factors.¹⁻⁷ concurrent with rising unemployment, increased poverty, and reduced health services. Such societal influences that heighten threats to adolescent well-being signal the critical need for effective interventions that address individual, family, and community factors.⁸

Young people aged 10 to 24 years comprise about 30% of the Caribbean population. Until recently, little comprehensive health data on this group have been available. Much research has been focused on a single issue or single country. As governments in the

Caribbean concentrate more attention on the health of young people,⁹ a more comprehensive picture of youth health becomes increasingly important. Data are needed to design and implement effective programmes to improve and monitor trends in youth health over time. This analysis provides a descriptive portrait of youth health in the Caribbean from young people's perspectives.

Theories of adolescent development have evolved to include many interwoven factors associated with the appearance and continuation of behaviours that may affect healthy negotiation of this life stage. These factors include the physical, psychosocial, behavioural, and environmental domains, as well as both internal and external factors.¹⁰⁻¹² Within a resiliency frameworks, this

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study gathered information about assets and potential problems to present an accurate picture of Caribbean adolescent perceptions and behaviours.¹³⁻¹⁴

METHODS

Study Design and Sampling

This cross-sectional study represents a collaborative effort of the ministries of health in 9 countries, the Pan American Health Organization (PAHO), and the World Health Organization (WHO) Collaborating Centre in Adolescent Health at the University of Minnesota, Minneapolis. Of the 19 Caribbean Community and Common Markets (CARICOM) countries, the following joined the regional survey: Antigua, Bahamas, Barbados, British Virgin Islands, Dominica, Grenada, Guyana, Jamaica, and St. Lucia. Together these nations represent 71% of the population and half of all countries in the Anglophone Caribbean. Although differences among participating and nonparticipating countries exist, we know of no major differences in economic and social conditions that are likely to affect adolescent health status.

Sampling procedures were implemented by statisticians at the ministries of health (MOH) in each country. The sample size was selected to be large enough to represent school-going teenagers within each country and to ensure power to detect meaningful

differences between genders and among age groups and countries. (In accordance with agreements between PAHO and MOH, only combined data across the region will be published. Nation-specific data are available through the Caribbean Programme Office, PAHO.) A 20% oversampling allowed for student absences and attrition caused by incomplete surveys. The number of 30-student classrooms needed to obtain the desired number of participants distributed across grades was determined, and classrooms were selected randomly from a list of all schools in the country. All students in selected classrooms were invited to participate. In practice, there were minor procedural variations among countries. Nonproportional country samples were sought to prevent results being dominated by Jamaica, which has over half the population of the 9 participating countries.

Measurement

A draft questionnaire was reviewed by maternal and child health representatives from 19 Caribbean nations. Then, based on pilot tests in 3 countries (n=105), a core instrument was constructed. After comment by maternal and child health representatives, the questionnaire was again piloted under classroom conditions and critiqued by more than 50 school-going young people from 3 countries. The core instrument, finalized by ministry of health representatives, contained 87

multiple-choice questions with 246 possible individual responses. Questions addressed school performance, school environment, alcohol and other drug use, sexual abuse, moral behaviour (honesty), violence, mental health and suicide, practicing a religion, family characteristics, relationships with others, general health care, and nutrition and body image.

Data Collection and Management

In-country survey administrators were chosen mainly from ministries of health or education and received training and support from the PAHO Caribbean Programme Office. Teachers were asked to introduce the survey to their class several days before data collection. On the survey day, survey administrators gave a standard introduction to each selected class. Students were informed of the purpose and content of the survey and that they could choose to participate or not, with permission to skip questions they did not want to answer. Teachers were instructed to avoid circulating during data collection to re-inforce confidentiality.

Data entry was completed either within the participating country or by a selected central data entry firm. Consistency across data entry groups was assured by the use of a standard codebook. Entered data were forwarded to the University of Minnesota WHO Collaborating Centre for analysis.

Suspect surveys (where 40% or more of the 160 non-branching items were missing or where there was a pattern of improbable responses) were omitted from the dataset. Eight of the 9 countries used the survey instrument as produced, and one country revised the form by adding additional questions and changing others. Where changes were not substantive, results were adapted and included in the 9-country analysis. In a few cases in which the meaning of questions was altered, item-specific responses were not included in the analysis.

Consent and Confidentiality

Passive consent procedures included written information sent home with students or letters mailed to parents. There were no personal identifiers on the questionnaires. Survey administrators were instructed not to read completed surveys or to allow anyone else to do so. Completed surveys were delivered to the Country Coordinator for processing immediately after site completion. Approval for the study was obtained from the institutional review board of the University of Minnesota Human Subjects Review Committee.

Data Analysis

Descriptive analyses were conducted for all variables of interest. Rates are presented as proportions for the total sample and by age group and

gender. Age was analyzed as 3 categories of 3 years that roughly correspond to important points of school continuation in the Caribbean - points where children commonly using Pearson 2 tests. Statistical significance was set at $P < .01$ to correct for sensitivity caused by the large sample. To better describe the region as a whole, weighting was used so that the results reflect the proportion of the population in each country. Although this approach gave more weight to the larger countries, there were only 4 out of more than 200 possible responses for which weighted results varied more than 5% from un-weighted results, indicating that it was reasonable to present weighted results as representing the region and not solely the dominance of larger countries.

Validity and Participation

Each individual survey was subjected to a series of computer checks for completeness and accuracy. Surveys with more than 40% of non-branching items left blank (13% of the weighted sample) were deleted on the assumption that whatever led to the incompleteness (e.g., poor reading ability, distractions, or disinterest) made the remaining answers untrustworthy. Surveys were also checked for invalid responses (e.g., inconsistent responses and endorsing the use of bogus drugs). Surveys were only deleted (2%) if they had 4 inconsistent

responses or 2 or more clearly invalid responses.

RESULTS

Characteristics of the Sample

The total sample included 15,695 students aged 10 to 18 years from 9 countries. Over three-quarters (78.5%) of respondents were Black of African heritage, 6.5% were East Indian, 5.5% were American Indian, 2.8% were White, 0.7% were Asian, and 6.0% were "other". A higher proportion of the survey respondents were female (61% vs 39% male). Approximately one-fifth of participants (21.4%) were 16 to 18 years of age, 47.2% were 13 to 15, and nearly a third (31.4%) were aged 12 and under. The difference in age distribution for males and females, although statistically significant, was not large enough to be of practical importance (<3% in each age category).

General Health, Nutrition and Health Care Services

One in 5 adolescents stated that their general health was poor or fair (Table 1). Younger age was associated with reported better health. In addition, almost 10% of young people (more males than females) reported having a physical condition that limits their activities. About one-sixth (about half of those who think they need to lose weight) stated they have

used at least 1 weight-loss method. Although older adolescents were more likely to use diet or exercise to control weight, younger adolescents had higher rates of other methods (e.g., vomiting, laxative use). About 16% of males and females felt that they needed to gain weight.

Most adolescents (85.9%) reported having a place where they usually receive medical care; however, only 36.2% had a medical checkup and less than half had seen a dentist in the last 2 years. Regarding personal matters, many youths professed to believe that adults cannot be trusted to ensure confidentiality, including physicians (33.2%), nurses (20.8%), teachers (26.0%), guidance counsellors (20.1%), peer counsellors (21.4%), and parents (14.0%). Overall, males were consistently less likely to use health care services than females, and they were more likely to believe adults would not ensure confidentiality.

Mental Health, Violence and Abuse

Although most respondents saw themselves as generally happy, 1 in 6 saw themselves as generally happy, 1 in 6 saw themselves as sad, angry, or irritable (Table 2). Half had felt so “down” that they wondered if anything was worthwhile. One in 6 felt their friends cared very little about them. Many of the young people surveyed reported a history of abuse in their lives. About a sixth (15.9%) stated they had

been physically abused, most by an adult in their home, and 1 in 10 stated they worried about being physically abused. One-tenth reported sexual abuse, most frequently by adults outside of the home or other teens, but many reported abuse by adults in the home and by siblings. A small proportion (4.9%) reported a history of both physical and sexual abuse, and about 1 in 6 (15.2%) reported a history of 1 or the other.

Weapons were carried to school in the previous 30 days by one-fifth of the males. One-tenth of the boys and half that many girls reported that they had at some time been knocked unconscious in a fight, with similar numbers reporting that they had been stabbed or shot. For some adolescents, the thread of violence was woven deeply into their life experiences. Two out of 5 youths reported that sometimes or most of the time they think about hurting or killing someone else. Strikingly, 1 in 6 young people in the English-speaking Caribbean reported thinking they would not live to the age of 25 years.

Tobacco, Alcohol and Other Substances

Few adolescents (1.4%) reported using tobacco. Alcohol was the most commonly used substance on a monthly or more frequent basis (females, 3.9%; males, 7.9%), followed by marijuana (females, 1.2%; males, 2.3%) and steroids (females, 1.4%; males, 3.2%). The percentage reporting use of any

Table 1: General Health and Nutrition of Caribbean Adolescents

	Gender (%)		Age group (%)			Total (%)
	Female	Male	<12 years	13-15 years	16-18 years	
General health ^{a-e}						
Poor	4.3	4.5	5.4	4.3	2.7	4.4
Fair	16.2	14.2	11.6	15.6	21.8	15.4
Good	34.8	39.0	34.7	37.7	36.4	36.5
Excellent	44.7	42.3	48.3	42.3	39.2	43.8
Limiting disability ^a	8.7	10.1	9.4	9.2	8.9	9.2
Exercise hard (work, play or exercise hard enough to sweat and breathe hard) ^{a-e}						
Never	26.5	21.7	30.4	23.1	17.3	24.6
1-2 times weekly	36.2	26.3	26.7	33.8	38.2	32.2
≥3 times weekly	37.3	52	42.8	43	44.5	43.1
Regular health problems (more than 1-2 times weekly) ^f						
Developing too fast ^{a,b,d,e}	16.3	16.4	18.1	17	11.5	16.3
Body not developing ^{b-e}	11.8	12.3	2.6	12.7	9.7	12
Headache ^a	16.7	11.1	14.5	14.4	14.8	14.5
Stomachaches ^a	11.3	16.5	10.2	9.2	8.8	9.4
Acne ^{a-e}	13.6	9.5	8.7	13	15.4	12
Number of health problems reported ^{a-e}						
None	49.8	55	52.4	51.5	51.8	51.8
1-2	39.4	35.1	35.2	38.3	40.5	37.7
3 or more	10.8	9.9	12.4	10.2	7.7	10.5
Body satisfaction						
Think weight is Ok ^{a-d}	67.7	71.6	73.3	66.8	67.9	69.2
Look in mirror, feel okay or happy ^{a-d}	87.7	89.5	91.3	87.1	87.0	88.4
Use of weight loss methods (ever)						
Diet or exercise ^{b-e}	15.5	15.3	12.2	16.4	18.8	15.4
Laxatives ^{a-e}	14.1	16.8	18.1	15.6	9.1	15.3
Vomiting ^{a-e}	7.7	8.9	11.0	7.7	4.5	8.2
Hungry because there is not enough food						
Lack food a lot ^{b-d}	8.3	9.1	11.3	7.7	6.2	8.6
Skip breakfast because	4.0	3.7	4.4	3.6	4.0	3.9
Clinic visits last 2 years						
Medical clinic ^{b-d}	36.3	36.1	29.7	38.5	41.2	36.2
Mental health service ^{b-d}	11.0	12.3	8.5	12.4	14.2	11.5
Dental visit ^{b-d}	42.1	40.0	35.9	43.2	45.4	41.3

^aStatistically significant difference between genders (P<.01)

^bStatistically significant difference between age groups (P<.01)

^cStatistically significant difference between age groups 10-12 vs 13-15 years(P<.01)

^dStatistically significant difference between age groups 10-12 vs 16-18 years (P<.01)

^eStatistically significant difference between age groups 13-15 vs 16-18 years (P<.01)

^fCategories: "a lot" vs "hardly ever" or "sometimes"

Table 2: Mental Health, Violence and Abuse Among Caribbean Youth

Behaviours and Thinking	Gender (%)		Age group (%)			Total (%)
	Female	Male	<12 years	13-15 years	16-18 years	
Affect^{a,c}						
In general, see self as happy	84.0	82.6	86.1	82.5	81.0	83.4
In general see self as sad, angry or irritable	16.0	17.4	13.9	17.5	19.0	16.6
Abuse						
Worry about being physically abused ^{a,c,e}	12.2	10.3	10.5	11.6	13.2	11.5
Worry about being sexually abuse ^{d,f}	15.1	10.0	12.2	13.7	13.4	13.1
Ever been physically abused ^{a-d,f,g}	15.1	16.9	14.8	16.0	17.8	15.9
Ever been sexually abused ^{b,f}	10.5	9.1	9.3	10.3	10.1	9.9
Suicide						
Think I will not live to age 25y ^{c,g}	15.0	14.4	19.8	13.9	8.1	14.8
Ever tried to kill self ^{a-d}	12.8	11.0	10.8	12.7	12.9	12.1
Family member/friend tried to kill self ^{a-d,g}	23.5	19.9	16.9	23.2	28.6	22.1
Interpersonal violence (one or more times)						
Been in a fight where weapons were used ^{a-d,h}	6.4	16.7	6.6	12.3	12.6	10.5
Carried a weapon to school (last 30 days) ^{a-d,g,h}	7.3	20.1	6.6	14.5	17.7	12.2
Carried weapon at times other than school (last 30 days) ^{a-d,g,h}	13.2	31.5	11.8	23.8	27.6	20.4
Ever belonged to a gang ^{a,b,d,g}	12.9	21.8	14.2	18.4	15.1	16.5
Ever rendered unconscious from violence ^{a,c,d,g}	5.2	10.1	8.6	7.6	3.1	7.1
Ever been stabbed or shot ^{a-d,g}						
1 time	3.1	6.7	4.0	5.2	3.7	4.5
2 times	0.9	2.4	1.8	1.4	0.9	1.5
3 or more times	0.6	1.4	1.0	0.9	0.7	0.9
Rage (think about hurting/ killing someone)^{a-d,g}						
Some of the time	34.1	37.0	23.0	39.0	25.5	35.2
Almost always	4.3	5.9	3.9	5.0	6.5	4.9

^aStatistically significant difference between age groups (P<.01).

^bStatistically significant difference between age groups 10-12 vs 13-15 years(P<.01).

^cStatistically significant difference between age groups 10-12 vs 16-18 years (P<.01).

^dStatistically significant difference between genders (P<.01).

^ePhysical abuse was defined as "when someone causes you to have a scar, black and blue marks, welts, bleeding, or a broken bone".

^fSexual abuse was defined as "when someone in your family or someone else touches you in a place you did not want to be touched, or does something sexually which they shouldn't have done to you, or forces you to touch them sexually or have sex with them"

^gStatistically significant difference between age groups 13-15 vs 16-18 years (P<.01)

^hWeapon was defined as "a gun, knife, razor, bat and chains".

substances monthly or more often was relatively low (10.6%), with the highest rates among males and older adolescents. Over a fifth of young people nonetheless reported experiencing problems related to drinking or drug use, most commonly loss of friends or the breakup of a relationship. Some adolescents came from homes in which 1 or more parents had problems with drinking (13.4%) or drugs (2.8%) in the last 5 years. A small but important percentage of the adolescents reported worrying about their own drinking or drug use (7.3%), and nearly that many reported usually drinking 4 or more drinks at 1 time (5.8%). A higher percentage (6.9%) reported driving while intoxicated, and an even higher proportion (16.5%) reported riding in a motorized vehicle with people who had been drinking or using drugs.

Sexuality

Most young people (65.9%) stated they had not had sexual intercourse (Table 3). Among those, the 5 most commonly cited reasons for abstinence among both males and females were wanting to wait until marriage (females, 63%; males, 58%), wanting to wait until older (females, 53%; males, 52%), not wanting to risk

pregnancy (females, 42%; males, 37%), fear of disease (females, 35%; males, 33%), and not being emotionally ready (females, 37%; males, 30%). The 2 most frequently cited reasons for sexual abstinence in all 3 age groups were wanting to wait until marriage and wanting to wait until older.

Of the one-third of adolescents who had had intercourse, almost half reported that their first sexual intercourse was forced. Over half of sexually active boys and about a quarter of females stated that the age of first intercourse was 10 years or younger; and almost two-thirds had intercourse before the age of 13. Males were about 3 times more likely than females to have had 5 or more sexual partners. Only a quarter of these young people always used some form of birth control and were only slightly more worried about getting pregnant or causing a pregnancy (an event that had occurred among 10% of youths). Over half of those with history of intercourse (53.3%) used a condom during their most recent intercourse. Approximately equal percentages of males (9.8%) and females (9.5%) reported a history of same-gender sexual experience and attraction.

Table 3: Sexual Behaviour and Sexuality of Caribbean Adolescent

	Gender (%)		Age group (%)			Total (%)
	Female	Male	<12 years	13-15 years	16-18 years	
Ever had sexual intercourse ^{a-c}	22.2	51.9	22.0	34.6	51.6	34.1
First intercourse was forced (yes or somewhat) ^{b-e,g}	47.6	31.9	42.8	37.9	36.5	38.3
Age of first intercourse, years ^{b-g}						
<10	23.5	54.8	71.9	44.2	25.7	42.8
11-12	16.4	23.2	28.1	23.4	13.0	20.6
13-15	44.7	19.3		32.4	39.7	28.9
≥16	15.3	2.7			21.6	7.6
Total number of sex partners ^{b,d-h}						
1	54.0	20.0	35.2	31.1	35.3	33.2
2	18.8	14.8	20.2	14.9	16.0	16.3
3	10.5	15.4	15.2	14.5	11.6	13.8
4	3.6	9.5	5.4	7.6	7.7	7.2
5	3.3	7.0	5.9	5.7	5.5	5.7
≥6	9.9	32.5	18.1	26.2	23.9	23.9
Sexual Attraction ^{a-f,j}						
Only same sex	4.5	5.5	6.8	4.6	2.7	4.9
Equal both sexes	5.0	4.3	6.0	4.8	2.6	4.8
Only opposite	44.7	56.8	27.0	53.5	76.0	49.4
Not sure	13.3	11.7	20.4	10.2	6.5	12.7
Don't understand	32.5	21.7	39.7	26.9	12.2	28.2
Always use birth control ^{b-g}	30.0	24.0	17.8	24.8	34.2	26.3
Used condom during most recent intercourse ^{b-g}	59.8	49.6	26.4	51.8	70.8	53.3
Have been or gotten someone pregnant ^{a-d,f}	7.0	11.6	7.5	11.7	7.6	9.6
Worry about getting/making pregnant (somewhat or a lot) ^{a-f}	28.7	32.8	21.3	32.3	42.1	30.3
If contraception were needed, where would you go ^{a-f,j}						
Medical doctor	38.0	42.3	45.4	39.4	29.6	39.7
Public health clinic	13.5	16.7	17.0	13.0	15.4	14.8
Family planning clinic	20.4	9.6	15.0	16.1	18.6	16.1
Youth clinic	8.8	7.1	9.1	8.6	5.3	8.1
Drug store/pharmacy	15.2	19.5	11.1	18.5	23.4	16.9
Public bathroom	1.5	1.1	1.5	1.5	0.7	1.3
Mini-mart, grocery	2.6	3.8	0.8	3.1	7.0	3.1
Worry about getting AIDS ^{a-f}	37.2	41.1	28.7	40.4	52.5	38.7
Worry about getting AIDS ^{b-g}	46.9	45.0	34.8	44.4	56.1	46.0
Worry about getting AIDS (a lot) ^{a-f}	26.4	29.4	21.6	28.6	36.1	27.6
Worry about getting AIDS (a lot) ^{b,d-g}	32.9	33.8	26.8	31.9	41.1	33.7

^aPercentage of total respondents;

^bStatistically significant gender difference (P<.01)

^cSignificant difference between age groups (P<.01)

^dStatistically significant difference between age groups 10-12 vs 13-15 years(P<.01)

^eStatistically significant difference between age groups 10-12 vs 16-18 years (P<.01)

^fStatistically significant difference between age groups 13-15 vs 16-18 years (P<.01)

^gPercentage of those reporting history of intercourse

^hPainwise comparisons using X2 tests with categories 1,2,3,4+

ⁱPainwise comparisons using X2 tests grouping "not sure"/"don't understand"

^jPainwise age comparison of MD/clinics vs nonclinic.

DISCUSSION

Overall, the majority of young people say they are healthy; 4 out of 5 rate their overall health “good” or “excellent”. Nearly 9 out of 10 are satisfied with their appearance. Most feel that their mother and father care about them, and 7 out of 8 young people report no health problems at all. Few teenagers say they smoke cigarettes, and the overall reported use of drugs is relatively low. Nearly two-thirds – half of those in the older teen years – of the adolescents say that they have not had sexual intercourse. While most young people are doing well, many face significant problems. One in 10 adolescents report that they have a disability or chronic illness, and an equal proportion report that they have 3 or more health problems. This estimate of disability is conservative because, as Thorburn suggests, children in the Caribbean, as else-where in developing countries, may be less likely to be identified or treated for disabling conditions.¹⁵

Nutritional health findings are somewhat paradoxical in that even though most adolescents are satisfied with the way they look, they continue to focus on and worry about their physical development and weight. Although only 12% are not satisfied with their weight, many young people display signs of eating disorders: laxative use, diuretic use, and vomiting as means to control weight. These findings, although not conclusive, are

consistent with research in Curacao indicating that cultural norms of dieting and thinness are not prerequisite to disordered eating.¹⁶ The high proportion of youths never eating breakfast may be cause for concern because of the positive association of breakfast with cognitive function, especially in younger adolescents.^{17,18}

Most young people in this school-based study stated they were generally happy. However, one in 9 in our study had attempted suicide, and many reported that they had a friend or relative who has tried to kill him or herself. Furthermore, nearly 1 in 7 youths report a history of physical abuse, and 1 in 10 (nearly equal for boys and girls) have been sexually abused. Both the high prevalence of sexual abuse reported by adolescent males and comparability with that reported by females is highly unusual. In most surveys of sexual abuse among adolescents, females are more likely to report abuse than their male counterparts.¹⁹ The high rates of reported physical abuse and persistent approval of corporal punishment as a disciplinary measure are reported in much of the Caribbean region.²⁰⁻²⁴ The high rates of sexual abuse reported among males may be consistent with the finding that nearly half reported having had intercourse before the age of 11. Likewise, the sexual abuse reported by both males (9.1%) and females (10.5%) is especially telling in the face of these same young people reporting that their first sexual

experience was forced (31.9% and 47.6% for males and females, respectively).

Reported lifetime tobacco use is low in this group compared with other studies,²⁵ but the survey question included only cigarettes, not other forms of tobacco. The rate of reported marijuana use is also low,²⁶ however, results may be influenced by a number of issues. First, marijuana is illicit and youths may not have felt comfortable reporting illicit drug use. Second, the sample is drawn from a relatively young school-going population and a proportionately older sample may have had a higher reported rate of use. Finally, the survey question focused on smoking marijuana, and some youths may drink it as a tea (P. Brandon; oral communication; April 15, 1998).

Postponing sexual intercourse appears to be a conscious choice for some adolescents, consistent with a 1997 survey of adolescent reproductive health conducted in Jamaica.²⁷ However, among sexually active youths, fewer than 3 in 10 regularly use contraception. Results indicate that perceived lack of confidentiality may be a factor in seeking contraception. Although fewer than 1 in 10 young people have been pregnant or gotten someone pregnant, many girls drop out after having a child and thus would not be counted in an in-school survey (A. Venema; written communication; November 13, 1997). In a

region in which AIDS/HIV is rising,^{28,29} most young people still report that contracting HIV is not a personal worry. This finding is consistent with other studies indicating a need for sexual health education.^{30,31} Same-sex attraction and behaviour is not discussed frequently in the Caribbean; however, young people tell us that it is becoming more evident in adolescent social circles. One young person stated, "In my school it (homosexuality) is talked about. It's not so hidden. When you part it's even more known. There is a new trend where it's kind of acceptable." In addition, the sexual tourism industry may attract young men into same-sex relationships for economic reasons rather than because of sexual orientation.

Cultural and social differences may account for some of the similarities and differences between these findings and those of studies in the United States and in other parts of the world.^{32,33} Similar to the United States, boys are more likely to be involved in interpersonal violence and substance use.¹² Interpersonal violence and weapon carrying appear to be common among young people throughout the Western Hemisphere.^{34,35} Although it is striking that many Caribbean youths do not think they will live past 25 years of age, it is important to note that expectations of a fore-shortened future have been noted among young people in the United States as well.³⁶

Whereas gender differences in reported intercourse among US adolescents are small, in the Caribbean, female youths in school are only half as likely to have had sexual intercourse as their age-matched male peers. This finding is consistent with reported sexual activity gender differences in Colombia.³⁷ In addition, US females are more likely to have attempted suicide, but there is no gender difference in Caribbean youths. Age differences in alcohol use, a factor in the United States, are likewise not apparent in the Caribbean,¹² but there is equal cause for concern about concurrent use of alcohol and motor vehicles.³⁸

Several methodological considerations affect the generalizability of these findings. Foremost, the study included only adolescents attending school. In some Caribbean countries, both English-speaking and non-English speaking, less than half of older adolescents are enrolled in secondary school.³⁹ There are strong selection effects inherent in the Caribbean school system, in that students are required to attend elementary school, but at about age 12 students are required to pass a test to go further. Thus, 10-12 year olds in school are more representative of their age group than are the older age groups in school. After age 12, youths in the academic track are selected for their academic potential and are more likely to have personal assets and support systems needed to stay in

school. This may also affect their behaviour and health patterns. As a consequence, what is presented here may represent the most optimistic picture of young people in the region. Second, only the English-speaking countries were involved in the study; therefore, results cannot be generalized beyond the CARICOM nations. Third, country-by-country variations in actual sampling procedures may have affected findings. The country samples were large enough in size, however, and covered sufficient schools throughout each country, that the results within each group are likely to provide a good indication of attitudes and behaviour nationally. Fourth, despite instructions and efforts at confidentiality, students may not have trusted that assurance. Finally, the high rate of questionnaires disallowed because of incompleteness may also bias results in unknown ways.

CONCLUSIONS

Adolescents represent a sizable proportion of the Caribbean population, yet public policy on youth issues has often focused only on risk behaviour and has excluded the voices of young people.⁴⁰ These analyses provide a broad understanding of factors affecting the present or future health of adolescents in the English-speaking Caribbean. As the first regional study of this breadth, results serve as an information source for designing and implementing strategies

aimed at reducing risk and promoting healthy youth development. Findings can also be used as a baseline to monitor regional trends in youth perceptions and health behaviours. Furthermore, these results can lead to specific hypotheses to test in future studies.

It is clear that there are some significant health-related issues facing youths in the Caribbean, but it is equally clear that most young people are doing well. If nations are to be successful in addressing youth health, positive strategies need to be built on promoting health. Youths need to be viewed as part of the solution – and thus key partners with adults – not merely problems to be fixed. Many problems are interrelated; to affect significantly influences others.⁴⁰ Strategies must be built on a framework that recognizes the links between healthy behaviour and the broader context of family, community, society, and culture.⁴¹ The needs are great but so, too, are the opportunities.

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CONTRIBUTORS

L. Halcón was the lead author, coordinated the data analysis, and was principal investigator. R.W. Blum was the principal investigator on the overall study. T. Beuhring developed the sampling frame, participated in the in-country training, and worked with national-level statistician to ensure the representativeness of the samples. E. Pate conceptualized the original study, coordinated the 9 countries collaborating in the project, and reviewed the article. S. Campbell-Forrester had a key role in instrument development, helped to ensure support from the participating countries' ministries of health, and reviewed the article. A. Venema coordinated the sample selection, oversaw data entry and management at the country level, and reviewed the article.

HUMAN PARTICIPANT PROTECTION

The consent protocol followed community standards requiring passive notification of parents by the

school principal or senior administrator, who sent letters home by mail or with the students. The study was approved by the institutional review board of the Human Subjects Protection Programme, University of Minnesota.

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CAJANAQUOTE

"...I bore three children for him and I have had to shoulder the financial burden of the home over the years. It it's a school fee, lunch money, doctor bill or money for Christmas shopping, it's got to be me..."

*From a Letter to Janet Sinclair
(column in the 'Star', Jamaica)
February, 1983*

NewsBriefs

To Reduce Stress, Eat a Cupcake?

Dr. Norman Pecoraro, a researcher at the University of California at San Francisco, claims that rats have a biologic basis for overeating in the face of chronic stress. He believes that, “If you are overly stressed, it’s probably a good idea to overeat, at least in the short run”. There are two types of biologic stress: acute and chroni.

Acute occurs when a single event sends messages to the body’s adrenal glands to pump out stress hormones. Once the event is over, the elevated stress hormones interact with brain receptors to shut off the loop.

In **chronic** stress, the adrenal gland is continuously pumping out stress hormones. Until the University of California San Francisco study, no one knew how chronic stress was turned off.

In the study, rats were exposed to chronic stress. The rats were then fed sugar, and their stress hormone levels declined. The mechanism involves

abdominal fat, energy-rich food, and pleasure centers in the brain. In rats, stress hormones are also responsible for increasing deposits of fat in the abdomen. It looks like a catch-22, large deposits of adominal fat may increase risk of certain chronic diseases but also help alleviate the perils of chronic stress. (NY Times, September 16, 2003.)

[Source: Nutrition Today, Vol. 38, No. 6, November/December, 2003.]

Calcium and Children

The parents of growing children need to be aware of new calcium recommendations of the Food and Nutrition Board, National Academy of Sciences. For children and teenagers the recommended dietary allowances for calcium range from 800 mg a day for 4- to 8-year-olds, to 1300 mg a day for 9- to 18-year-olds. To meet these needs, children should consume three to four servings of low-fat milk products every day.

[Source: Nutrition Today, Vol. 38, No. 6, November/December, 2003.]

Long-Term Use of Multivitamins May Protect Against Colon Cancer

An article published in the American Journal of Epidemiology looked at the relationship between multivitamin use and the incidence of colon cancer. A total of 145,260 men and women enrolled in the Cancer Prevention Study II Nutrition Cohort were asked about their multivitamin use. Looking at this data and data from the same participants enrolled in a study completed 10 years earlier, the authors concluded that regular multivitamin use (4 or more times per week) was not associated with a decreased risk of colorectal cancer (rate ratio = 1.04, 95% confidence interval).

However, previous multivitamin use did reduce risk (rate ratio = .71, 95% confidence interval). Whether multivitamin use decreases the risk of colorectal cancer has not been studied in randomized studies.

[Source: *American Journal of Epidemiology*, 2003; 158:621-628.]

Don't Sit Still

It's not just exercise, but other movement (standing, walking, talking, fidgeting, etc.), that keeps some people lean. For 10 days, researchers tracked the posture and the movements made by 10 lean and 10 mildly obese people, all self-proclaimed "couch potatoes."

The results: the big potatoes stayed seated for about 2½ hours longer per day than the small potatoes. That means the obese group burned about 350 fewer calories a day – a difference that translate into 33 pounds a year.

Alas, it's not so easy to change. For two months, the researchers put seven members of the obese group on a diet (they lost 18 pounds) and overfed the lean folks (they gained 9 pounds). Losing or gaining weight made no difference in how much either group moved, sat or stood.

What to do: If you're overweight, keep moving. Walk rather than ride. Don't sit when you can stand and keep moving when you have to sit. Move to the music from your car radio. Lift weights or do sit-ups while you watch TV, etc.

[Source: *Nutrition Action*, Vol. 32, No. 3, April 2005.]

Stones and Pounds

How many extra pounds increase your odds of getting a kidney stone? The risk is significantly higher in men who gain about 25 pounds since around age 20 (compared to those who gain no weight).

The risk also rises if your waist measures at least 37 inches (men or younger women) or at least 31 inches (older women). Risk increases further as you add more pounds or inches.

What to do: Lose excess weight, but not too quickly. Rapid weight loss can increase the risk of kidney stones.

Safe Microwaving

Cooking and Reheating

- Arrange food evenly in the dish and add some liquid if needed. Cover with a loose lid to let any steam escape. (If you use plastic wrap, make sure it does not come in contact with the food.)
- Do not cook large cuts of meat on high power (100%). Use medium power (50%) and a longer cooking time, so the heat can reach the center without overcooking the outer areas.
- If your microwave does not have a carousel, stir or rotate the food midway through the microwaving time.
- If you are partially cooking food in the microwave before you finish it on the grill or in a conventional oven, transfer the microwaved food immediately. Warm, partially cooked food is a breeding ground for bacteria.
- Use a food thermometer or the oven's temperature probe to verify that meat, poultry, and casseroles have reached a safe temperature. Place the thermometer in the thickest area of the meat or poultry – not near fat or bone – and in the innermost part of the thigh of whole poultry. Check in several places to be sure red meat reaches 160°F, poultry reaches 180°F, and egg casseroles reach 160°F. Fish should flake with a fork. Leftovers should reach 165°F.
- Food continues to cook after the microwave is turned off, as heat flows from hotter to cooler regions. So allow dense foods like meat, poultry, quiche, and casseroles to stand for five minutes before you check the internal temperature. Foods that are not dense – cut vegetables, bread, soup, and beverages, for example – do not need to stand.
- Do not cook whole, stuffed poultry in the microwave. The stuffing might not reach the temperature needed to destroy harmful bacteria.
- Heat ready-to-eat foods like hot dogs, fully cooked ham, and leftovers until they're steaming hot.

Defrosting

- Remove food from its packaging before you defrost it in the microwave. Foam trays and plastic wraps can melt, which can cause potentially harmful chemicals to migrate into the food.
- If you have defrosted meat, poultry, egg casseroles, or fish in the microwave, cook immediately.

[Source: *Nutrition Action HealthLetter*, April 2005.]