

INDONESIAN NUTRITIONAL STATUS OF CHILDREN 1989-2005: POVERTY AND HOUSEHOLD FOOD SECURITY, DIETARY DIVERSITY AND INFECTION: WHICH IS THE MOST IMPORTANT RISK?

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ABSTRAK

STATUS GIZI ANAK INDONESIA 1989-2005 DAN FAKTOR RISIKO TERPENTING

Indonesia berhasil mengendalikan masalah gizi-mikro, kurang vitamin A (KVA) dan Gangguan Akibat Kurang Iodium (GAKI), dengan mengembangkan program-program yang berbasis komunitas. Namun demikian, kurang energi protein masih masalah. Walaupun besar masalah gizi berkurang cukup bermakna selama 25 tahun terakhir, namun risiko gagal tumbuh pada usia penyapihan berdampak pada semua sektor ekonomi dan menjadi kendala pertumbuhan ekonomi dan kualitas hidup. Makalah ini mengupas risiko faktor kemiskinan, keamanan pangan keluarga, keanekaragaman pangan dan infeksi penyakit terhadap gagal tumbuh anak Indonesia. Sumber data adalah hasil Survei Sosial Ekonomi Nasional (SUSENAS) 1989-2005. Data yang diolah meliputi konsumsi rumah tangga, data kesehatan individu dari modul gizi. Status gizi diukur menurut Z-skor yang mengacu pada rujukan internasional, NCHS. Pengolahan menggunakan alat bantu komputer. Selama 10 tahun terakhir, status gizi anak Indonesia tidak berubah secara bermakna dan rendahnya cakupan ASI eksklusif merupakan penyebab penting. Proporsi ibu yang mengaku menyusui sampai 12 bulan sebesar 75 persen, tetapi makanan pendamping telah diperkenalkan terlalu dini. Ibu yang menyusui bayinya secara eksklusif hingga enam bulan sebesar 12 persen dan rendahnya berperan terhadap gagal tumbuh bayi pada bulan ke 4 sampai ke 18. Penyebab utama gagal tumbuh anak-anak tersebut adalah infeksi penyakit dan rendahnya konsumsi makanan padat energi. Pola dasar penyebab gagal tumbuh anak ini dijumpai pada semua kelompok ekonomi. Anak-anak kelompok kuintil ekonomi terbawah yang terbanyak anak yang gagal tumbuh, namun tiga kelompok di atasnya tidak jauh berbeda. Anak dalam kelompok ekonomi teratas, berhasil mengurangi risiko gagal tumbuh walau masih dalam pola umum gagal tumbuh dan dalam rentang satu simpang baku di bawah baku internasional. Sementara kelompok lain berada dalam rentang 1,5 simpang baku di bawah baku internasional. Masalah ekonomi bersama-sama dengan faktor sanitasi lingkungan, akses kepada air bersih dan pendidikan yang rendah merupakan penyebab yang dominan. Pergeseran prioritas pengeluaran sedikit saja akan berdampak pada status gizi karena hampir 70 persen pendapatan penduduk Indonesia di bawah satu dolar per orang per hari. Sejak program gizi dilimpahkan kepada kewenangan pemerintah daerah, penanganan masalah gizi menghadapi kendala keterbatasan jumlah dan ketrampilan tenaga pelaksana. Gagal tumbuh pada anak usia penyapihan menjadi tantangan yang berat bagi perbaikan gizi masyarakat di Indonesia. Kerjasama pemerintah, keterlibatan masyarakat dalam perencanaan, lembaga-lembaga non pemerintah, lembaga-lembaga donatur non pemerintah akan sangat berarti dalam menurunkan masalah ini.

Katakunci : gagal-tumbuh, anak usia penyapihan, gizi masyarakat, kemiskinan.

BACKGROUND

Indonesia has been in the forefront of developing countries in the development of strong community based micronutrient control programs. It has pioneered the control of vitamin A deficiency and nutritional blindness. Indonesia has developed strong micro-nutrient control programs in the area of iron, and iodine. It has a countrywide growth monitoring program integrated with the immunization and MNCH program. Indonesia was one of the first countries in SE Asia to have standardized surveillance. It has received support from various bilateral and multilateral agencies. The government supports nutrition as one of the most important components of its public health program, and has funded it at relatively high levels consistently over the last two decades.

All this effort has had an impact. Nutritional blindness due to vitamin A deficiency has been controlled, the rates of goiter and anemia among pregnant women have gone down considerably over the last 25 years, and rates of under nutrition has improved. Food is affordable, even by the lowest quintile of income, and policies have been made with nutritional impacts being considered.

However growth faltering during weaning period continues to be a problem. Indonesian children fall behind children of the rest of the world during weaning, Indonesia economic and development potential also falls behind, where growth faltering does not occur.

The primary policy questions of concern, are

- a) why given the large investments the government making, is the nutritional status of children in Indonesia not improving?
- b) How can growth faltering during weaning be effectively reduced.

MATERIALS AND METHODS

The government has been collecting countrywide data on nutritional status through the Central Bureau of Statistic for some time, as well as through special studies. This is useful as it also allows for the exploration of other household characteristics as they related to poor nutrition and growth faltering.

The primary source of data is the 1989-2005 National Socio-economic Surveys (SUSENAS), both the household consumption data, and the individual health data, along with the nutrition module. This is a extensive source of data that is seldom utilized, except by several nutritionists.

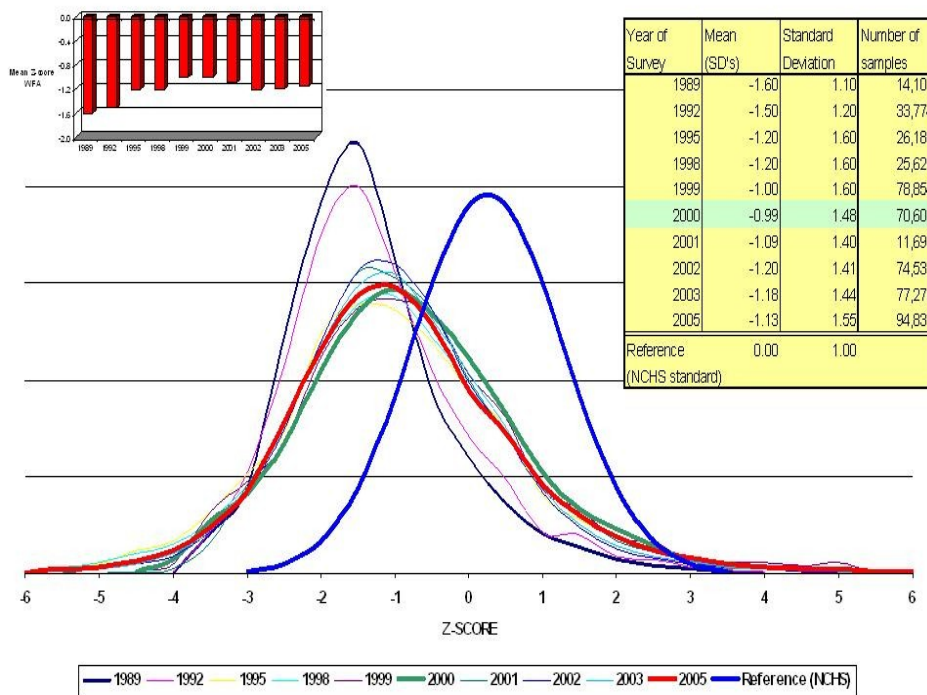
Nutritional status is described in Z scores from the NCHS international reference standard.

Computerized analysis was performed. For test of significance, an alpha score of 0.05, and a beta score of 0.2 was used.

RESULTS

The nutritional status of Indonesia has not much improved over the last 10 years. From the first SUSENAS nutritional measurement in 1989 until 1995 there had been a marked trend of improvement. However the momentum of nutrition improvement faltered in the middle of the 1990 decade. There was a paradoxical "counter intuitive" improvement during the monetary crisis. In the year 2000, mean nutritional status had improved over 38,1 percent from 1989, but by 2005 the mean nutritional status was only slightly improved over the 1995 assessment. Moreover the variance around the estimates have increased over time, as seen in Figure 1, tends to "flatten" the curve, there by making the traditional way of assessing risk (per cent of the sample less than -2 standard deviations from the international reference), somewhat problematic.

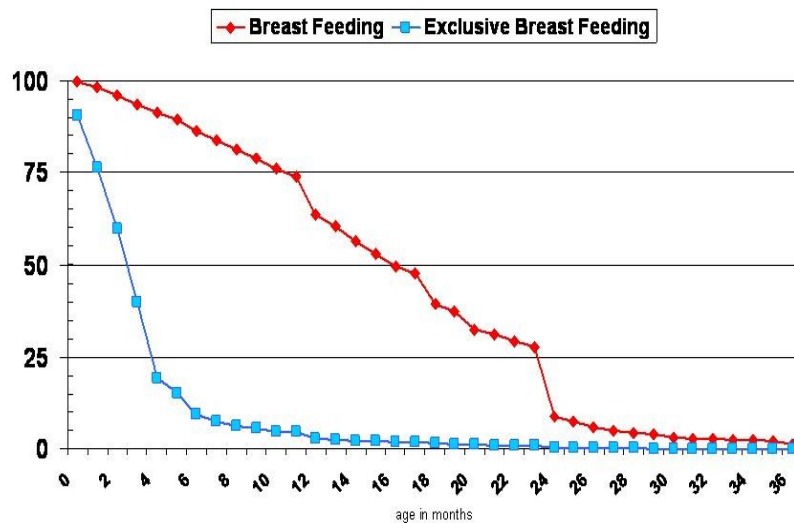
Figure 1
Distribution of Nutritional Status of Indonesian Preschool Children
 1989 - 2005



Low levels of exclusive breast feeding is at the core of growth faltering. Breast feeding is common in Indonesia. Seventy five percent of Indonesian mothers report feeding their children at least 12 months, however weaning food is introduced early, and only 12 percent of Indonesian mothers exclusively breast feed their children up to six months. This pattern of high levels of breast feeding, but low rates of exclusive breast feeding continue to much the same as

in 1976, and the cultural trait of early introduction of weaning food, does not give the infant the energy dense food that it needs to grow to its full potential of height and weight during the early years of development. Breast milk is a rich food, full of fatty acids, lipid, protein, and well balanced for optimal growth of the infant. By depriving the infant of exclusive breast feeding for six months, the infants growth falters and never recovers.

Figure 2
Breast Feeding and Exclusive Breast Feeding by Age
 SUSENAS 2004



This contributes to the universal growth faltering seen in Indonesia from the 4th month to the 18th month. It is interesting to note that Indonesian children are born very close to the international reference (Figure 3), and for the first several months actually grow above the international reference, responding well to the exclusive diet of breast milk. Then weaning food is introduced. The weaning food of course reflects the household diet, which in Indonesia is rich in carbohydrates, and low in energy dense (expensive) food.

One would expect that in the top quintile of economic attainment in Indonesia that growth faltering might not occur, as economic limitation to energy dense foods is

not a barrier. But dietary preferences appear to make a difference for the richest components of Indonesian society just as it appears to promote growth faltering among the infants of the poorest.

The poorest quintile has the greatest growth faltering, but the growth faltering of the 2nd, 3rd and 4th economic quintiles is not that much improved over the bottom quintile. Only the richest quintile has a significant reduced risk of growth faltering, but it follows the same pattern of growth faltering, but only 1 standard deviation below the international reference standard, while the other four quintiles are about -1.5 Z scores below the international reference standards.

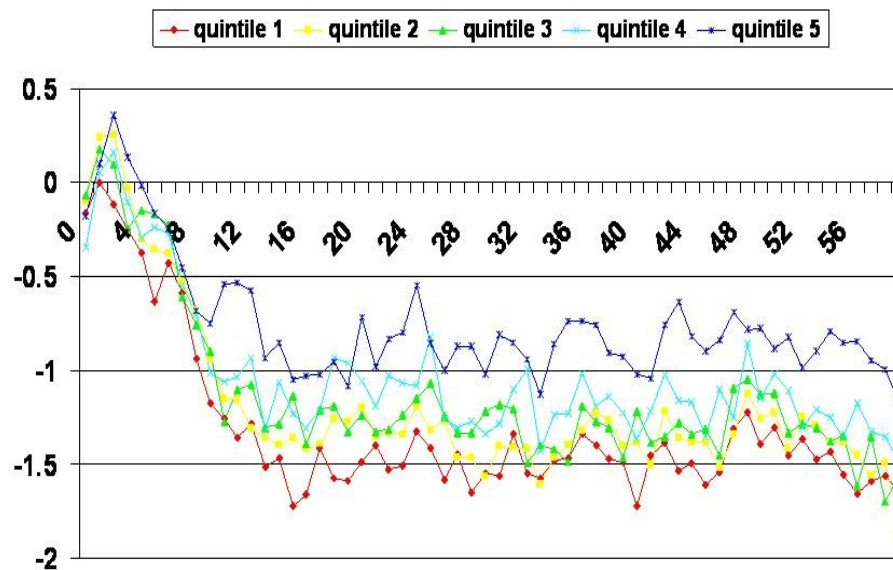


Figure 3
Weight by Age by Expenditure quintile
SUSENAS 2005

Growth faltering continues to plague both the rich and the poor of Indonesian children, and low levels of exclusive breast feeding, and lack of energy dense foods in weaning diet are perhaps the major factors that could be easily addressed by community nutrition programs. Education of parent, sanitation and associated levels of high enteric infection, also play a role in growth faltering, but these social issues are larger, and more expensive to change.

DISCUSSION

While being in the top quintile of expenditure does not protect infants from growth faltering. It is interesting to note that the bottom three quintiles have approximately the same risk. Poverty estimates are developed in Indonesia using cost of caloric intake, taking purchasing parity differences across the vast archipelago into consideration. Estimates of poverty vary greatly, and numbers from various sources

are often used to suggest that poverty is either increasing or has decreased. However, the first Millennium Development Goal (MDG's) is the elimination of absolute poverty and hunger. The indicator for absolute poverty is people living on less than a dollar a day (purchasing parity adjusted). Purchasing parity reflects that costs vary from location to location both between countries and within countries. This of course needs to be taken into account, but SUSENAS expenditure figures are not parity adjusted, just raw information given by the person being interviewed to the BPS enumerator.

Another problem in using SUSENAS data is the lack of precision, the potential for sampling error, lack of standardization of the enumerators, and the fact the enumerators are collecting expenditure data, not income data. However it is the only data available. When one takes household expenditures, divides to make it average daily expenditure, and then divides it one more time by the

number of members reported within the household, it gives an imprecise but interesting picture that should provide some input into the discussions of poverty in Indonesia.

The impact of absolute poverty on nutritional status is much more wide spread than people assume. While generally it is assumed that most poor families are in the bottom two quintiles of expenditure, almost 70 percents of Indonesia live in households where expenditures are below US\$ 1,00 per person per day. In fact the bottom two deciles of Indonesian households family members live on approximately US\$ 0.50 per person per day. The slope of the curve of economic expenditure remains very shallow with the six deciles of economic attainment less that US\$ 0.80 per person per day.

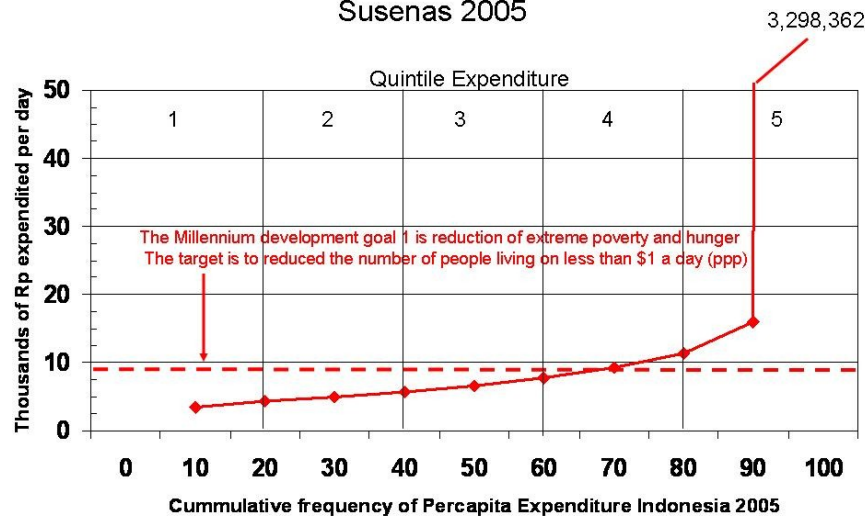
The low level of economic attainment by the majority of Indonesian households (Figure 4), is one of the primary reason behind the lack of difference between the

bottom three quintiles in Figure 3. Energy dense foods are expensive, and it appears that in all three bottom quintiles, there is a tendency not to include these in the diets of young infants.

Small shifts in household expenditures might have a dramatic impact on growth faltering. Moreover community nutrition is now the domain of local governments, and while this brings the opportunity to develop area specific nutrition interventions, there is insufficient manpower and technical ability at the district level to accomplish this.

Indonesia also has an unusual pattern of tobacco consumption, with almost 70 percents of the men consuming tobacco, but only 4 percents of the women. One potential strategy to reducing growth faltering among children in the bottom quintiles would be the promotion of the concept for fathers helping their children by reducing the consumption of tobacco so that families can feed their infants high energy dense foods during weaning.

Figure 4
Daily Expenditure Per Person in Indonesia
Susenas 2005



CONCLUSION

Growth faltering of weaning age children remains the biggest challenge to the Indonesian nutritional community.

Decentralization offers the development of new more effective paradigm for nutritional improvement. Moreover cooperation with other sectors within the government, participatory planning with high risk communities, and finding partners in the

private sector, and NGO's can help promote programs that help reduce the risk of growth faltering.

While poverty plays a role in growth faltering, it is a phenomena seen across all strata of expenditure.

The two most important issues for the nutrition community to address is the promotion of exclusive breast feeding until six months, and the introduction of energy dense feeds into weaning diets.

The nutrition unit and nutrition research center should also facilitate the distribution of the SUSENAS data to various universities, public health and nutrition training centers as well as to all the nutrition research centers, and socialize and facilitate the analysis and exploitation of this data for policy considerations, to support decentralization.

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