**Chronic diseases – note on discussion**

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Providing a background on how the theme was reached, Srivats defined chronic diseases have been – something that affects a person leading to death over a period of time or continues lifelong till patient dies. He discussed the perspective of chronic diseases from the hypothesis of epidemiological transition – the shifts from age of pestilence to late degenerative diseases, from age of survival to industrialised era (proposed by Abdel Omran in 1971). He added that chronic diseases are thought to be related to "development" with it being a kind of inevitable consequence of development.

He went on to briefly describe the various papers that have been submitted towards this theme of chronic diseases: the way the diseases are classified, the way in which they are seen in contrast to infectious diseases, the fact that people oriented professionals have focused on infectious diseases as they are thought of impacting the poor more, and the growing realisation that those from lower socio-economic status are being affected by chronic diseases. So why are the poor being affected by these diseases? Are DM and hypertension diseases? There are increasing number of cases are being documented in clinics and the population and these warrant further looking into.

**Anand Zachariah (Skype)**

His sharing was based on the note provided earlier. It is based on his clinical experience, and reflections from reading of a book by French philosopher Canguilhem.

He reflected on the current situation with hospital wards being filled with cases of strokes, heart attacks, kidney diseases, secondary infections etc, with a lot of such morbidity requiring hospitalisation. He added about the tendency to see diabetes, hypertension and dyslipidemia still as separate categories, and also as "diseases".

Describing the nature of chronic disease pathology, he discussed that derangements at biochemical and physiological level may not be symptomatic. Screening tests have increased picking up persons in such categories, and who are being given medications – potentially an indication of overmedicalisation.

Some focus was also put on the human physiology itself in the context of changing circumstances of society and social conditions – and these changes occurring at biochemical level are in some way reflective of a mal-adaptation to these societal changes. With these changes, would it be normal to expect 20% diabetes prevalence in society?

Within a medical system and framework, our approach has been to treat diseases with medicines, but now, at a species level with a new set of modern conditions there is a need to redefine our approach going beyond a medical framework.

He then went to discuss risk factors of chronic diseases, first narrating about Framingham study and the knowledge that emerged. Research by pharma companies also contributed further in the understanding, with some unexpected outcomes such as with Drug Diuril by Merck causing

reduction in blood pressure. The approach used by pharma companies to survive and thrive was to market aggressively while simultaneously conducting research on drugs. Due to such circumstances, it was seen that treatment was already being given for pre-hypertension before the evidence for its benefits had been documented.

There has been change in thinking about hypertension – earlier it was by assessing signs and symptoms, and later technical committees in the US drafted guidelines for cut-offs for blood pressure, and these went on to be adopted widely. But have we adequately reflected on the risk factors and cut-offs in India? Should we relook at the framework for understanding chronic diseases? Experiences suggest that epidemiological risk factors in India may be different and that should be studied: in the Gudalur study the focus was on DM, "is the epidemic in rural tribal area similar to urban area?". The four Gudalur tribes included were found to have prevalence between 1-3%, whereas in Chennai it was 18%. So Gudalur while exposed to variety of "developmental" assaults, still had low diabetes prevalence. But they did have a high rate of low BMI, with more than 40% adults with less than 18.5. Another important finding was that of hypertension prevalence which was between 10-20%, and most deaths there being caused by vascular causes. It would be important to study what the reason for their situation was? Diet, exercise etc.? Can urban and rural areas be seen from same the epidemiological lens? Should we do local studies, and how will that help in prevention? Our approach has been individual patient and medical, but should we look at underlying changes in society? A philosophical perspective?

**Responses and comments by participants:**

Veena discussed the linkages evident between hypercholesterolemia and cereal diet, and the importance of that in understanding risk factors. She added also that biochemistries of the Indian population are different. A challenge according to her was how to address the issue of low BMI diabetes, especially as many of them do not have adequate food itself.

Mira expressed concern about the shift in the nature of edible salt which was now concentrated sodium chloride instead of traditional rock salt. She also added about the opportunity of using fruits available in forests with anti-diabetic properties such as jamun. To this Veena responded that it was low potassium and not high salt concentration that was linked with htn. Mira further added that traditional salt is wrongly being labelled as "impure salt", and asked about the role of ISM in management of chronic diseases.

Yogesh appreciated the sharing, and enquired about what should then be done if the pre-diabetic and pre-hypertensives are not considered as abnormal (in the context of adaptation). Besides that, he put forth the question of whether chronic stress or other factors may be playing a role in high rates of hypertension among the undernourished? Anand responded that the way disease is diagnosed has changed over time – the notion of "disease" has changed from symptoms to biochemical basis etc. There are inadequacies in epidemiological framework and our approach in addressing them medically.

Sridhar requested clarification on why maladaptation was being separated from and disease, suggesting that they may not be related? Anand responded that our way of thinking has been that diseases have specific causation, but over the last 50 years, stress of "development" on humankind

has been drastic unlike any earlier phase, and modern medicine does not adequately recognise this. There is a need to look at it.

Anant Phadke commented that even in developed countries, the coloured races which were poorer had higher prevalence of chronic diseases. He added that medical interventions have played a role in reducing mortality and improving life, and that has been well documented. Therefore he does not see a case against it. Through this system, increasing awareness on the importance of diet and exercise are percolating, which is prevalent at least in some sections of society, and also that doctors begin treatment with suggesting lifestyle changes. So it not correct to say that medical profession has not impacted chronic diseases, and it may be an overstatement. About the philosophical dimension of the problem, he reflected on the impact of capitalism, and the associated features of those within its system increasing their stress levels, along with assault by adverstisements etc, and also on the political economy of health and health care.

Padmini asked whether medical professional share enough data through their systematic/regular recording to show physiological change in the context of social change? Furthermore, if detailed histories are being recorded in a disaggregated manner? Anand responded that the basis of clinical guidelines in India is derived from Western situation and therefore the study of chronic disease pathogenesis in Indian population may be necessary. Some studies in relation to individual risk factors to CAD/stroke are already shown to be different in different countries.

**Yogesh's presentation/sharing:**

He reiterated some of the issues that emerged from the background papers and discussions earlier, about conventional chronic diseases and why they happen among the poor, and the inadequacies of current model to understand complexity of chronic diseases. All this he put in the context of his own clinical experience in a tribal area. For one, he was not expecting to see many chronic diseases, but many did show up. But there was great diversity, beyond diabetes and hypertension. The type of presentation of cases was also quite different, with issues such as lean diabetes (those with BMI less than 18.5), with associated issues of access to food, access to other services, work activity levels etc. These aspects defy the diagnostic methods that have been put out. In a similar light, communicable diseases such as TB also present differently in Delhi and Ganiyari.

Recognising that data is scarce and necessary, he suggested the need for recording diverse illnesses with socially disaggregated data. In the rural context even issues such as chronic arthritis presents different issues, for instance, without access to Western style toilets the patients have a much more difficult time. Also, he felt that host factors may play a more important role towards explain these differences in presentations of illnesses, beside the agent or environment.

He reminded however that evidence already available on chronic diseases has its value, existing information on risk factors cannot be ignored, but it is not an adequate explanation for the entire spectrum of people. About dietary habits, he added that what has really changed is increase in cereals – which is a result of well meaning people having argued for in the name of food security. An imbalance has been caused in society, and so "food" needs focus by this group. Another issue is that of chronic stress – and unbundling it is different. How should it be understood?

He reflected further that Srinath's paper showed conventional risk factors have increased manifold in the population – and in each socio-economic group, but that the figure for the Nicobarese tribals are not applicable to other tribals as they have a high average BMI. Low BMI chronic disease according to Srinath could be due to salt. Exploration beyond traditional risk factors is needed to understand why chronic diseases are increasing among these populations.

Also, in rural areas models to manage and prevent chronic diseases (health promotion) are not available. There is a need to work on this, including how the PHC may fit into the scheme of things. There is a need to learn from the HIV or AA experiences, with impacted people coming together to identify and work towards solutions. In addition, diseases cant be put against each other in competition (for instance, communicable vs non-communicable diseases), and especially those looking at it from a UHC perspective should offer balanced views.

There was further reflection on Sathyamala's paper which raised the issue of viewing diseases from people's perspective, for instance of lower back pain and low BP syndromes. About this it was commented that there will need to be greater weightage given to some diseases as compared to others. She also discussed the changes in diagnostic equipment and criteria as associated with increased prevalence of diseases – which is an academic question.

Comments by participants:

Veena discussed the potential importance of body composition beyond just body weight, percentage body fat for instance. Exclusive cereal consumption also was seen as part of the problem. So dietary modifications as an approach may not be appropriate in rural areas. Also the 104 services for chronic diseases is one model for rural areas – currently in operation in Andhra where each village is visited once a month and medicines are given for one month.

Sarojini expressed that it cannot be said that problems such as chronic back pain are smaller problems and they can be quite debilitating. Based on current situation, Vitamin D deficiency in India appears epidemic and needs to be looked into. Also, major medical trials are currently occurring in diabetes and hypertension management and no new trials on HIV are registered. So the pharma company interests are another issue to be kept in mind. Yogesh withdrew his comment based on this sharing. Neglected chronic diseases such as fistulas and prolapses are also important. Cancers and mental health problems too have not been discussed. Alcohol comes across as largest problem when speaking to populations. In addition, he mentioned that trials will be conducted where there is money, and so many are being conducted for diabetes and hypertension.

Manisha discussed about uterine prolapse as an issue with large stigma and social impact on women, and it is seen quite commonly in Maharashtra. Despite efforts, including non-surgical interventions, they have not been able to eliminate it. Another issue is of iatrogenic chronic diseases, such as that created by hysterectomy where the endocrine system is affected.

Raising a question about the findings of the study in tribal area, Padmini asked if life expectancy has increased and may have played a role in prevalence of NCDs there? Yogesh responded that in rural areas, the age of onset is almost 12 years less than that of urban India for many non-communicable diseases, and for cancers. But he agreed that old age comes with its problems too.

Srivats put forth the issue of inadequacy of healthcare access in some remote areas. In tribal areas, tendency to access care is not stable and therefore epidemiological data cannot be connected with what may be seen at the clinic. Yogesh responded that if quality and affordability of care improves, there is always increasing access irrespective of setting, even from communities traditionally never seeking care, based on his experience.

Mira discussed onset of diseases such as diabetes in younger age groups in slums and rural areas, and suggested that it may be related to consumption of food supplies from PDS. She also mentioned the Helpage model with mobile medical clinics for elderly, especially in the context of difficulty in accessing healthcare for elderly. She added that Asthma has also increased and may be linked to prevalence of Parthenium plants. Yogesh responded that there is a need for more discussion and more models for non-communicable disease control for rural and tribal areas.

Priyadarsh discussed about the high prevalence of chronic renal failure among males aged between 30-50 years, and questioned what the causative factor may be, including pesticides and NSAIDs. He added that prevalence of chronic diseases is increasing in practice area of Bissam, Cuttack similar to what has been reported by other delegates in their areas respectively.

Lakshmi requested for information on impact of co-morbidity of DM and TB, to which Yogesh responded that diabetes increases vulnerability to TB, and Gargeya agreed to that based on Andhra survey experience. Also that even in national programs, TB and DM are supposed to be mutually checked for, but implemented poorly. Statistics from Kerala show the correlation.

Hemlata discussed about evidence on excess folic acid and low B12 during pregnancy reportedly causing problems. In addition, she expressed concern about high prevalence of diabetes among transgender population and female sex workers. Yogesh responded that there is a need for studies on issues such as the causes before birth (during antenatal period) and after birth – and such studies are ongoing.

Discussing recent NSSO data, Rahul asked what the meaning of the reportedly decreasing cereal consumption mean, to which Veena suggested for the need to look at disaggregated data.

**Gargeya's presentation:**

He suggested that a useful approach to this discussion would be to first look at provisions within national programs and public health systems, before discussing local situation and need for other models. He provided information on the NPCDCS (National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases, and Stroke). While central government provides 60 percent of funds, the expected 40% from state governments usually does not come. For cancer, there are state cancer institutes for replenishable funds are available and are not being spent. Also there is provision for district day care centre with funds for oncologist, diagnostic equipment, and another 4 support staff who are not being recruited. For cardiovascular diseases, there are the cardiac units for each district being set up – this is all from the $11^{th}$ five year plan money – so it has been a very slow process. For diabetes and hypertension, each CHC is expected to have a NCD clinic, with diagnostic kits for which funding is available, but usually it is seen that the equipment is not working, and there is need towards advocacy towards these gaps. Even at sub-centre level there is provision for glucometers, but it is not being implemented. Another program is the NPHCE (National

program for healthcare for elderly) which has been implemented in all districts in Andhra, where every CHC is provided with defibrillators, and physiotherapy equipments, and nebulisers to subcentres etc, but it is seen that usage and upkeep poor. Therefore, funding is available, and a lot of effort has gone into creating the program – but follow-up has been inadequate. However, there is need for further attention to issues such as need for geriatric ward, separate queues for elderly, thyroid disorders, and fluoride.

To this, Prabir related his experience on why implementation has been a problem – due to poor timings of release of funds, leaving very little time for spending each year. In addition, there are several clauses usually associated with the way the expenditure should take place which may not be logical or appropriate for local needs.

**Anurag's presentation (by Skype):**

He mentioned that the term non-communicable diseases itself is problematic, as it does not communicate anything – it groups together all diseases that are not communicable diseases. More recently, the term communicable diseases also is seen to be of an older paradigm in the context of small pox etc, and now we have other kinds of classifications, for instance, infectious diseases for pneumonia. NCDs are not unified by a common etiology and so it is not a helpful term. Often people with such diseases are coming at late stage to hospitals where nothing much can be done. In the past it was thought that developing countries were mainly affected by communicable diseases, and developed countries by non-communicable diseases. Now there is talk about transition etc, and that these diseases are a kind of collateral damage to the approach of development. It is not that these diseases were not around earlier, but now their patterns are changing such as issues of early onset etc. The causal factors in India may be beyond what has been traditionally described in international literature, for instance, maternal undernutrition. Studies on a cohort of children study by Dr Yagnik have shown low birth weight babies with poor glucose tolerance at age 6. Evidence on efficacy of care is also less for India. Should our sensitivity to treatment be compared to Caucasian data or data from Black community? He added that management of NCDs was a challenge – as dietary restrictions cant be used for those already undernourished, and salt control cant be used for the worker in field. There is a need for a screening program for catching people early as too many cases coming in late stage and severe morbidity.

He reflected that it may be a good idea to not focus on NCDs but on "better health" as an approach, as health improves resilience against communicable and non-communicable diseases. He discussed about non-availability of space for children to play in cities and increase in sedentary lifestyles, and the inability to cycle in cities due to dangerous traffic and unsafe roads. Looking at just non-communicable diseases is a reductionist approach, and would be unworkable. Many of the solutions and interventions are low cost, and there is a need for comprehensive primary healthcare to deliver it. The existing NCD program itself has not been heard of much in North India. Also, the health system has deep conflict of interest with NCDs, and there is a need to turn the tap off rather than mop the floor – and healthcare systems will not do anything about it. The underlying issue needs to be addressed. There is also a need for counselling services along with treating NCDs.

Responses by participants:

Mira expressed concern about the health budget cuts, and the shifting of responsibility to states. Insurance approach getting more attention rather than addressing the determinants.

Veena agreed that the proposition of better health as the approach would be worthwhile considering. She added that moving up the class ladder for mothers has been found to be the only way to improve birth weight of infants. Therefore it is a constellation of factors and not only one that determines some of these outcomes.

Anant, while agreeing to most points, suggested that disease causation should be looked at multiple levels – and each of these levels need remedy. The fundamental issue is a wrong kind of development, with monopolistic capitalism. So there is need medical treatment, and counselling, but also for intervention at social level and a new kind of fundamental development approach. Each of these levels has to be in unison with each other. Despite mfc's constraints are a relatively amateurish organisation, this can be taken up for discussion. Alma Ata Declaration is too simplistic, but message of Alma Ata needs to be revisited. To this, Anurag responded that mfc can offer a synthesis of perspective. He added that there is lack of community support for better health, and that people are committing suicides for apparently trivial reasons. But some communities in Uttarakhand and Maldives show that community support is beneficial. In Canada a public pool, park and library are available in every neighbourhood, and so it made a world of difference for the local residents who use those facilities. He quoted Virchow about epidemics being reflective of change in mass culture, further adding that food processing industries have taken over kitchens, with biscuits consumed for breakfast.

Srivats discussed about the survey experience from Gudalur on diabetics where some participants did not find difficulty in adapting to diabetic diet, but some found it very difficult. His opinion was that potentially an educational process may help cope with problems in everyday life. It is important to reflect on how adults learn, and the learning process is important so that it can translate to practice. To that Prabir added that it would have to be a skill-sharing rather than traditional education. People have ways of dealing with problems within their context. He added the importance of encouraging traditional diets, rather than eating only what is given through PDS.

Veena added that access to large parks will lead to children playing there, so in such a situation there is no need for "education" for behavioural change, but rather making the conditions appropriate.

Shridhar added that biologically non-communicable diseases are diverse group of diseases. Programs are there, but there is need for implementation, sharing horizontally, and paying attention to detail. At ground level there is no thought process, just blind implementation. What is needed is a problem solving system rather than project implementation. There is also a need to define the role of the health workers in this problem solving system. Anurag added that it can be shown to be within the capacity of the primary health level to address complex problems such as obesity.