

# chronic disease news

a newsletter of



VOLUME 3

ISSUE 1

June 2011



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## Editorial



Dear Readers,

Welcome to the fifth issue of Chronic Disease News. This newsletter is designed to keep you up to date with the state of chronic disease in Bangladesh, as well as to share the findings of recent research projects undertaken by the Centre for Control of Chronic Diseases in Bangladesh (CCCDDB).

In this issue, we report on CCCDB's celebration of World Physical Activity Day (6 April 2011), which was held in association with the Brazil-based Agita Mundo Network. This event provided a great opportunity to raise public awareness of the benefits of physical activity to prevent and control chronic diseases.

We also report on CCCDB's contributions to ICDDR,B's Annual Scientific Conference, during which two special symposia and a scientific session on non-communicable diseases were held. These provided a great opportunity for international and national experts to share their experience of tackling chronic disease at home and abroad.

On the research front, this issue of the newsletter highlights two recent studies on the current pattern of tobacco-use in Bangladesh and care-seeking behaviour for chronic diseases in Bangladesh.

In other news, I am pleased to report that a number of research projects on chronic diseases—particularly on chronic obstructive pulmonary disease (COPD), type 2 diabetes and hypertension—are being implemented in the field. Soon we will be able to share with you the findings of these important studies.

In addition, the Centre started the 2<sup>nd</sup> round of its MPH-Plus programme in March. As you probably know, this programme is conducted in collaboration with our partners from BRAC University James P Grant School of Public Health and the Institute of Development Studies, UK.

We will be sharing news of these two ventures with you in future issues.

In the meantime, I hope you enjoy reading this issue of Chronic Disease News.

Alejandro Cravioto  
Executive Director, ICDDR,B

## BREAKING NEWS

Our readers and donors will be happy to learn that the Board of Trustees of ICDDR,B has approved the Centre for Control of Chronic Diseases in Bangladesh (CCCDDB) as the Centre for Chronic Diseases of ICDDR,B through its ongoing restructuring process. Congratulations to all CCCDB members on this achievement and we thank the donors for the generous support to achieve this.

# Men in urban low-income groups smoke more

## Findings from a recent study on the pattern of tobacco-use in Bangladesh

The use of tobacco and related products is a major behavioral health-risk for humans. According to the WHO report on the Global Tobacco Epidemic 2008, nearly two-thirds of the world's smokers live in a group of 10 countries that includes Bangladesh. Among the daily male smokers, 35% were in developed countries and 50% in developing countries (Mackay & Ericksen, 2002).

Tobacco-use is a widespread phenomenon in Bangladesh. It includes both smoking and non-smoking (chewing tobacco leaf).

Smoking is largely prevalent in males. Studies found that more than 66% of men in the rural sites and 68% of men in urban areas had experience of smoking, and almost 52% and 55% respectively reported smoking at the time of interview. WHO (2008) reported a substantially larger rural-urban difference, with 30% of the rural men currently smoking compared to 43% of the urban men. Some recent studies observed that tobacco-use was higher among the lower socioeconomic groups in Bangladesh (Choudhury *et al.* 2007, DGHS 2007).

In 2009, the Centre for Control of Chronic Diseases in

Bangladesh (CCCDDB) conducted a study of 39,038 individuals to determine the prevalence of risk-factors and chronic diseases in four Health and Demographic Surveillance Sites of ICDDR,B. Located in three rural settings of Bangladesh (Matlab, Abhaynagar, and Mirsarai) and one urban setting (Kamalapur), the study participants comprised 13,584 men and 25,454 women aged 25 years and above.

On the use of tobacco and related products, information on current as well as previous use was collected. This information included duration and frequency of tobacco use in both smoking and non-smoking categories. Non-smoking use also included the chewing of betel leaf, since it is a common practice in Bangladesh to use a combination of betel, tobacco leaf and betel nut.

### Smoking

Among the male participants, more than 50% reported smoking at the time of interview while the rate was only 1% among the female participants. The prevalence of current smoking peaked at the end of the fourth decade and beginning of the fifth

decade of age in this population, with slightly lower rates in the urban respondents compared to the rural respondents. Though the numbers are very small, prevalence of smoking in females goes up as age increases.

The study shows that around 98% of the women had never smoked, and only 1% of the rural and urban women reported smoking at the time of interview.

Poverty and smoking seem to be positively related, as the study findings show that in both rural and urban settings prevalence of smoking goes down with increasing levels of wealth. For women, although at a much lower level, the same pattern can be observed. These findings are supported by other Bangladesh-based tobacco studies, showing more tobacco use among the lower socioeconomic groups (Choudhury *et al.* 2007, DGHS 2007).

On average, the number of sticks smoked daily was 12.5 for men in rural sites and 11.8 in the urban site. Women in the urban site,

who reported smoking, smoked slightly more (6.2 sticks daily) compared to women in the three rural sites (5.6 sticks daily). Differences by age-group both in rural and urban settings are relatively small. The age group of 40-59 years show the highest frequency of smoking among the current smokers.

The study also shows that men from low-income groups not only smoke more frequently, they also seem to consume more sticks compared to men from high-income groups; in the rural sites, currently-smoking men in the poorest quintile consumed on average 15 sticks per day compared to 10.3 in the least poor quintile. In the urban site, the average daily consumption for the same groups was 13.2 sticks and 9.4 sticks. In rural women, consumption of cigarettes or related products does not seem to be related to their poverty status; in the urban site, currently-smoking women in the poorest quintile consumed 6.5 sticks daily compared to 4.8 sticks in the least poor quintile.

## Non-smoking use of tobacco leaf

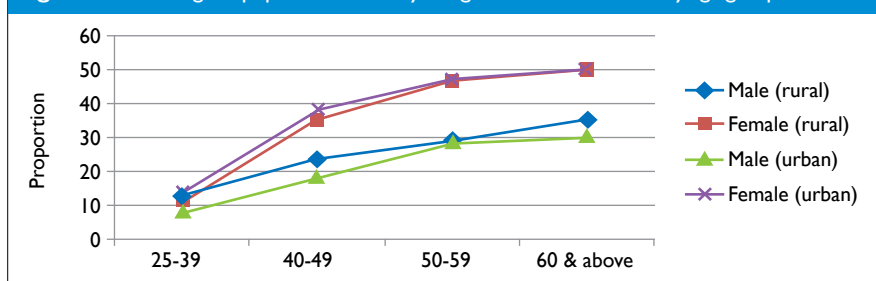
Whereas tobacco smoking seems to be a male vice, women more frequently use betel or tobacco leaf which is the non-smoking use of tobacco. In the rural surveillance sites, 22% of the men and almost 29% of the women reported using tobacco and/or betel leaf at the time of interview, and in the urban surveillance site, 15% of the men and 25% of the women reported the same. Except for the rural respondents aged 25 to 39, women outnumber men in the use of tobacco and betel leaf. Tobacco and betel leaf-use increases with age, climbing to around 50% for women in both rural and urban sites (See figure 1).

In the rural surveillance sites, the differences between the poorest and less poor are minimal; only the least poor seem less likely to be current users of tobacco and/or betel leaf. Differences by poverty status are more pronounced in the urban site where 46% of the women from the poorest quintile were using tobacco and betel leaf during the time of interview, compared to 14% of the women from the least poor quintile (See figure 2).

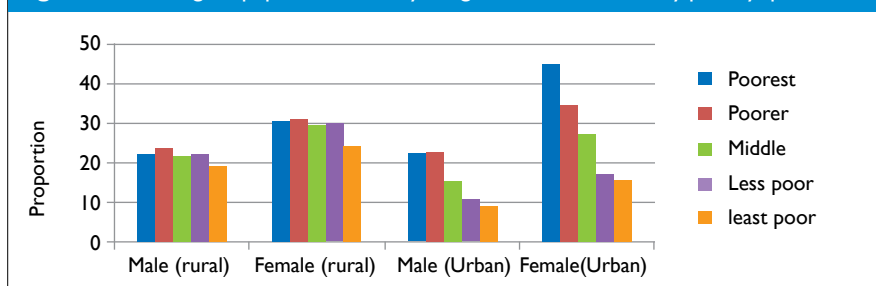
Though the prevalence of tobacco and betel leaf use is slightly higher in rural areas, urban users consume more frequently than their counterparts in the rural surveillance sites; urban users chew on average 7.7 times per day compared to 7.4 times among the rural users. Rural women tend to use more frequently than rural men but in the urban surveillance site this is the other way around. There are no clear differences influenced by poverty status.

The results of multivariate analysis showed that male sex, poverty, lower levels of education, and urban

**Figure 1:** Percentage of population currently using tobacco or betel leaf, by age groups



**Figure 2:** Percentage of population currently using tobacco or betel leaf by poverty quintiles



residence were all independently and positively associated with the increased prevalence of smoking. Independent predictors of smokeless tobacco consumption were: female sex, increasing age, lower levels of education, poverty, and urban residence. As confirmed before, smoking is mainly a male vice whereas women dominate in consuming smokeless tobacco.

Interventions to reduce or stop smoking should be directed towards the poor and young people, and people with lower education. Women should be targeted for prevention of the use of smokeless tobacco product. Reasons for rural-urban variation in the prevalence of smoking should be investigated and the feasibility of implementing proven anti-smoking measures should be explored.

Bangladesh was the first country to ratify the Framework Convention on Tobacco Control. Hence, the Smoking and Tobacco Product Usage (Control) Act 2005 went into effect in May 2009. Surveys capturing the impact of the new policy on tobacco usage are yet to be conducted. Also, an evaluation of the implementation of the measures outlined in the policy is advisable so that revisions to the implementation process can be made to ensure the impact of the legislation. The most popular brand of cigarette is currently taxed at 67%, which is still below World Bank recommended rates. Further, the ban on advertising of tobacco products is incomplete as there are advertisements at the point of sale, via the internet and as promotional offerings. Smoking is still permitted in designated smoking areas, indoor offices, restaurants and public transportation. Most importantly, the National Tobacco Control Unit is understaffed and underfunded with only 2 staff and a budget of approximately US\$ 50,000 per year.

## Care-seeking behaviour for chronic diseases in Bangladesh

Chronic disease prevalence is steadily increasing worldwide, even among the working age populations. Among the total deaths that occurred in 2005, chronic diseases caused 60% globally with 43% of deaths occurring in people under age of 70 years. Many of these premature deaths were avoidable. In addition, unmanaged chronic disease has a negative impact on disability adjusted life-years straining the workforce and economy of individuals, families, and entire countries.

In 2002, chronic disease was implicated in 44% of Bangladeshi mortalities (Morabia 2006). In Matlab, a rural area of Bangladesh, non-communicable disease mortality (excluding injury and accidents) increased from 8% (1986) to 68% (2006) (Karar 2009). This epidemiological shift has serious implications for Bangladesh's economy, healthcare system and society. Mitigating this epidemic's impact will require a large health workforce.

Serious shortages of MBBS doctors, nurses and technicians coupled with limited capacity to train such professionals leave Bangladesh without an adequate public-sector health workforce. For affordable and accessible healthcare, most Bangladeshis rely on the informal sector, particularly unqualified allopathic practitioners (UAP), usually drug-sellers and village doctors. Bangladeshis recognise MBBS allopaths as the highest level of care, but consider them

inaccessible, and unaffordable. Cultural biases, education, economics, gender, and transportation constraints also have additional influence on individuals seeking care from the informal sector.

Despite the potential severity of this epidemic, only a few studies have been carried out in Bangladesh and nationally representative data is inadequate. Care seeking data is crucial to shaping effective health policies to confront this problem. This study seeks to fill the existing gap in chronic disease care by examining behavior and influencing factors around chronic disease diagnosis in urban and rural settings of Bangladesh.

The study was conducted in three Health and Demographic Surveillance Sites (HDSS) of ICDDR,B; two rural sites in Abhoynagar (southwestern Bangladesh) and Mirsarai (southeastern Bangladesh) and one urban site Kamalapur (southeastern Dhaka). A total of 32,665 respondents, both males and females over 25 years of age, residing in the selected HDSS surveillance areas were interviewed and data was collected for a two-month period at each site. Pre-existing surveillance data provided individual sociodemographic factors.

Healthcare providers were categorised as MBBS (MBBS general physicians and MBBS specialist doctors), Other

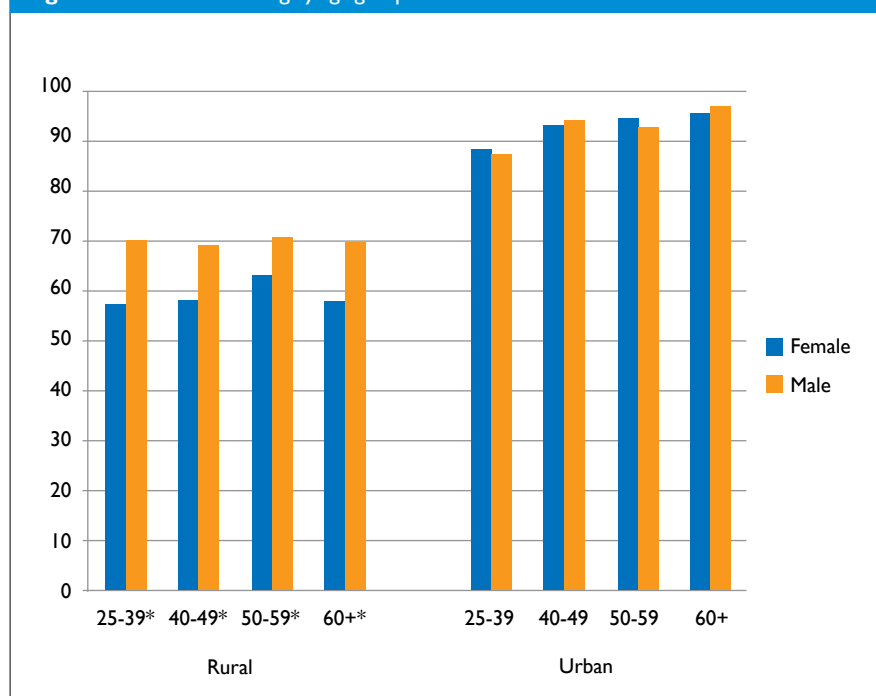
Qualified Allopathic Practitioners (Other QAP), Unqualified Allopathic Practitioners (UAP) and Non-allopathic Practitioners (NAP). Other QAPs include nurses, health workers and paramedics, UAPs include village doctors and drug-sellers and NAPs refer to *kabiraj*/spiritual healers and homeopaths.

Of the 32,665 survey respondents, 8,591 self reported chronic diseases and this group was comprised of predominantly women and rural residents. The mean age was 48.7 years and mean period to receive education was for 4.8 years. Among the respondents, 37.5% had no education while 12.1% had more than secondary education (>10 years). The survey findings show that the poorest respondents self reported chronic disease less frequently (10.3%) than the least poor (35.0%).

Hypertension (22.7%) was the most prevalent of the self-reported chronic conditions. This was followed by angina (8.6%), and diabetes (7.6%). It was also found that dyslipidemia (88.1%), heart attack (74.6%) and overweight (71.4%) were most likely to be reported with another condition. MBBS were the most-frequently reported diagnosis provider for every disease particularly dyslipidemia, overweight, and heart attack. UAPs were the second most common diagnosis providers in every category particularly hypertension, asthma and oral cancer. NAP and Other QAP contributed a nominal proportion of diagnoses, except for a relatively high frequency of NAP asthma diagnoses.

MBBS remained most frequent and UAP second most frequent self-reported diagnosis provider for all sociodemographic groups

Figure 1: MBBS care-seeking by age groups



\*Gender difference was statistically significant  $p < .01$

except most poor. UAP provided more diagnoses (46.7%) to most poor respondents compared to MBBS (45.7%). Other QAPs and NAPs comprised a comparatively nominal contribution to diagnoses in all groups. Urban residents and men sought MBBS care more frequently than rural residents and women. The proportion of MBBS diagnoses increased with increasing education and decreasing poverty. MBBS care-seeking decreased after the age of 60 years.

Urban rural inequalities showed the largest gaps in MBBS care-seeking. Graphs showed pronounced gender inequality (disfavouring women) in rural settings compared to almost no gender inequality existent in urban settings. These trends were consistently seen when care-seeking was stratified by age, education and poverty status. Age was chosen to illustrate these trends of gender and urban/rural inequality (Figure 1).

UAPs play a major role in chronic disease care. Low physician population density ratios, especially in rural areas, have created enormous demand for healthcare. UAPs respond to this demand by providing care to those unable to seek care from an MBBS degree-holder. While not a permanent solution to the healthcare equality challenges in Bangladesh, improving knowledge, attitude and practice of the UAPs can mitigate some of the damage these inequalities cause. Chronic disease will need particular attention as this problem has received little notice until recently. Continuous management of chronic disease is essential to proper care. UAPs are already providing diagnostic services and management and are well-placed to perform more routine disease monitoring and screening. Utilising this resource will prove a crucial step in improving healthcare in Bangladesh.

## ICDDR,B staff active in promoting healthier lifestyles!



The Centre for Control of Chronic Diseases in Bangladesh (CCCDB) of ICDDR,B, in collaboration with the Staff Welfare Association, observed World Physical Activity Day this year on 6 April. Like the previous year, a colourful rally and an aerobic session were organised to mark the event, and CCCDB designed posters, banners, festoons, specially-produced T-shirts and caps with the theme of the day 'Together for an active and happy life'.

The World Physical Activity Day was initiated by Brazil-based organisation Agita Mundo. This is a global campaign to promote physical activity as a key part of health and well-being. The Agita Mundo Network stimulates research, encourages the dissemination of information on the health benefits of physical activity and effective strategies to increase physical activity. It

advocates for physical activity and health, and supports the development of national and local programmes and networks for physical activity promotion.

In the morning of 6 April, ICDDR,B staff gathered at the Centre's headquarters at Mohakhali, Dhaka to participate in the rally. Starting from ICDDR,B at 9am, the rally proceeded to the T&T playground in Banani and returned to ICDDR,B after a one-hour speedy march. The participants of the rally chanted slogans about the importance of regular exercise to a healthy life. The rally was followed by a lively aerobics exercise session with enthusiastic participation by ICDDR,B staff. At the end of the exercise a discussion and a question-answer session was arranged to give a detailed view of the benefits of aerobics and physical activities.

Head of CCCDB Professor Louis Wilhelmus Niessen and President of Staff Welfare Association of ICDDR,B Ms Farzana Shahnaz Majid delivered motivational speeches during the event.

According to the World Health Organization, Bangladesh, like many developing nations, is straddling a demographic and epidemiological divide. In a review of 23 developing countries, Bangladesh was found to have the ninth highest rate of age-standardised mortality due to chronic diseases—primarily cardiovascular diseases and diabetes. (Abegunde D *et al.* 2007). Some 51% of deaths in Bangladesh happen due to non-communicable diseases and other chronic health conditions (BBS 2007) and a recent study conducted in medical college hospitals around Bangladesh found that among patients over 30 years of age about one-third of hospital admissions were due to major non-communicable diseases (DGHS 2007).

Physical activity is very much needed to prevent and control chronic health problems, such as heart disease, high blood pressure, diabetes, osteoporosis, asthma, and obesity. Research has shown that physical activity can lower blood glucose, blood pressure and bad cholesterol. It also lowers the risk for heart disease and stroke. It keeps the heart and bones strong, reduces stress-levels, and results in more energy and better health.

# Non-communicable diseases under the spotlight at ASCON



ICDDR,B organised its 13th Annual Scientific Conference (ASCON XIII) from 14-17 March 2011 at the Pan Pacific Sonargaon Dhaka. Several symposia and scientific sessions on chronic non-communicable diseases were organised during the conference.

Chaired by Dr Richard SW Smith, Director of UnitedHealth Global Chronic Disease Initiative, the first symposium was on universal health coverage in low- and middle-income countries for non-communicable diseases in which international and national experts shared their experience in light of their respective countries.

Professor Adolfo Rubinstein from the Institute for Clinical Effectiveness and Health Policy in Buenos Aires, Argentina shared with the audience the status of universal health coverage in Argentina citing some examples. Professor David

Dror, Chairman and Managing Director of Micro Insurance Academy, New Delhi, India spoke on whether most people are too poor to get treatment for non-communicable diseases. Professor Dror is also engaged with the Institute of Health Policy and Management of Erasmus University, Rotterdam, The Netherlands.

From Bangladesh, Professor Hajera Mahtab, a professor of Medicine and Endocrinology at BIRDEM in Dhaka, discussed the burden of non-communicable diseases in Bangladesh, with special reference to type 2 diabetes mellitus. The symposium ended with a lively fish bowl session moderated by Dr Richard Smith.

Another symposium was held on implementation of non-communicable disease programmes in low-resource settings. The session was chaired by eminent Bangladeshi

cardiologist National Professor Brig. (Rtd) Abdul Malik and co-chaired by Dr Richard S.W. Smith.

Professor Naomi (Dinky) Levitt from the Chronic Diseases Initiative in Africa and Division of Diabetic Medicine and Endocrinology, University of Cape Town, South Africa, shared an overview of the situation in South Africa along with her own experiences. Professor Liaquat Ali, Director, Bangladesh Institute of Health Sciences and Executive Director of Health Care Development Project, Dhaka, Bangladesh discussed self-sustainable comprehensive healthcare delivery in a developing country in light of the Health Care Development Project in Bangladesh.

Dr Dewan Shamsul Alam, Head, Chronic Non-communicable Diseases Unit, ICDDR,B, Dhaka, Bangladesh highlighted the lifestyle-related diseases and interventions and then Dr. Andrea Knigge, Principal Advisor, GIZ, Dhaka, Bangladesh made a presentation on the role of the private sector in public healthcare delivery: a public-private approach (Western Marine Shipyard and Ministry of Health and Family Welfare). The session ended with active participation of the audience at the fish bowl session conducted by Dr Richard Smith.

The scientific session titled 'Non-communicable diseases and lifestyle factors' was also held during the conference in which four speakers elaborated on chronic diseases and their risk-factors.

## FIRST FINDINGS BY THE CCCDB AT ASCON XIII

- Hypertension: adherence to treatment in rural Bangladesh—findings from a population-based study by **Masuma Akter Khanam**, Wietze Lindeboom, and Tracey Pérez Koehlmoos.
- Current pattern of tobacco-use in Bangladesh: findings from a population-based study by **Tracey Pérez Koehlmoos**, Masuma Akter Khanam, and Wietze Lindeboom.
- Helping to form club of diabetic and hypertensive patients for engaging in walking and changing lifestyle: an experience from Chakaria by **Ariful Moula**, Shahidul Hoque, Mijanur Rahman, Mohammad Iqbal, S.M.A. Hanifi, and Abbas Bhuiya.
- Undiagnosed diabetes and pre-diabetes among adults in urban Dhaka and rural Matlab: an urgent issue for intervention by **Dewan S. Alam**, Shamim H. Talukder, Mohammad Yunus, Tracey L. Kohlmoos, Alejandro Cravioto, and Louis W. Niessen.
- Hypertension: care-seeking behaviour in Bangladesh—findings from a population-based study by **Masuma Akter Khanam**, Wietze Lindeboom, John Parr, and Tracey Pérez Koehlmoos.
- Prevalence of asthma and healthcare-seeking behaviour in rural and urban Bangladesh by **John Parr**, Wietze Lindeboom, Masuma Khanam, and Tracey Pérez Koehlmoos.
- Physical activity in Bangladesh: findings from a population-based study by **Masuma Akter Khanam**, Wietze Lindeboom, and Tracey Pérez Koehlmoos.
- Fruit and vegetable consumption in Bangladesh: findings from a population-based study by **Tracey Pérez Koehlmoos**, Masuma Akter Khanam, and Wietze Lindeboom.
- Care-seeking behaviour for chronic disease: choosing a provider by **John Parr**, Wietze Lindeboom, Masuma Akter Khanam, and Tracey Pérez Koehlmoos.
- Metabolic syndrome: prevalence, associated factors, and impact on survival among older persons in rural Bangladesh by **Masuma Akter Khanam**, Chengxuan Qiu, Peter Kim Streatfield, Zarina Nahar Kabir, Åke Wahlin, and Wietze Lindeboom.
- Undiagnosed and uncontrolled hypertension among adults in rural Bangladesh: findings from a community-based study by **Masuma Akter Khanam**, Wietze Lindeboom, and Abdur Razzaque.
- Pre-hypertension and its predictors among adults in rural Bangladesh: findings from a community-based study by **Masuma Akter Khanam**, Wietze Lindeboom, and Abdur Razzaque.
- News from the front lines: unqualified allopathic practitioners' knowledge, attitude, and practice regarding chronic diseases by **John Parr**, Wietze Lindeboom, Masuma Khanam, Tamanna Sharmin, Nayeem Sobhan, and Tracey Pérez Koehlmoos.

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