“Strategies for Changing Behaviours in 21st Century”

National Conference on Health Promotion

March 30 to April 1, 2013
MESSAGE:

It gives me great pleasure to know that for the first time in Nepal, a Health Promotion Conference has been organized by the Ministry of Health and Population and a consortium of national and international partners. I understand that with the vast range of participants, this conference is aimed at setting health promotion on the national agenda with involvement of multi-sectoral stakeholders.

This conference will be able to fulfill one of the emerging needs of Nepal: a health promotion based approach to addressing the health needs of people and to decrease the existing gaps. This conference is very much appropriate and relevant in the present context, when the government is putting every effort into improving the health of people through active participation and private-public partnership, engaging multiple stakeholders including external development partners, International Non-Governmental Organisations and Non Governmental Organisations.

I believe the conclusions and recommendations from the conference will contribute to building a new approach for improving the health of the people in this country and will also help in the formation of appropriate policy and guidelines.

I wish this conference every success.

[Signature]
Vidyadhar Mallik
Minister
Ministry of Health and Population
MESSAGE

It is a matter of immense pleasure that the first health promotion conference has been organized by the joint effort of the Ministry of Health and Population, the Government of Nepal, NGOs, academia and media sectors. With the aim of health promotion moving forward based on national and international evidence, this conference is expected to promote the health behaviours of Nepalese people and decrease the research gap.

The conference has a wide range of objectives, one of them is sharing national and international evidence about the application of health promotion approaches in changing knowledge and behaviours. I hope the deliberation made during this conference will contribute to the changing behaviours of people through a health promotion approach.

Health Promotion is not only an issue of health but needs to think beyond health sector and therefore, I believe discussions from wide range of participation from multiple stakeholders will help to fulfill the objectives of the conference. I believe this conference will bring innovative approaches to improve health of the population at large.

I would like to thank all the organizers in choosing this theme for the conference and appreciate their efforts, as we all know the importance of health promotion; it views health in a holistic approach and tries to address all the determinants of health.

The Government of Nepal is committed for universal coverage of health services as a strategy of health for all. I am sure the conference will come out with some concrete conclusions and recommendations that would be useful in the planning and policy making process, so that the health problems of the people can be addressed.

I extend my best wishes for the success of the conference.

[Signature]
Dr. Praveen Mishra
Secretary
MESSAGE FROM ORGANISING COMMITTEE

Nepal has organized a Health Promotion Conference for the first time in its history. This conference was possible only because of the joint efforts from multiple stakeholders including GON, UN, Bilateral, I/NGOs, academia and media. This signifies the high priority given to the health promotion approach by Nepal's government and its partners. I believe that this will help in focusing on all the determinants of health, including the social, behavioral, economic and environmental conditions while developing our policies and guidelines.

I believe this conference will be a useful gathering, for it will develop optimal knowledge; enabling the decision makers to form strategies that aim to address the health problems and deficits. I would also like to thank all members of the organizing committee, the scientific committee and participants for their sincere dedication and hard work in various activities of the Health Promotion Conference. The discussions and deliberations from the conference is expected to help the various stakeholders in using multiple, complementary strategies to promote health at individual, community, district and national levels.

Health promotion is not only an issue for the health sector, but is a concern for multiple stakeholders. Health promotion is the process of enabling people to increase control over their health and its determinants, and thereby improve their health. Thus, involvement of the people itself is essential in improving their health. Health is not just the responsibility of the health sector; it goes beyond healthy life-styles and well-being and is considered a fundamental aspect of education, income, housing, food, security, etc.

The organizing and scientific committee members have given their full effort and worked very hard for this day and we feel quite rewarded by the active participation, fruitful deliberations and discussions from the experts in the field of health promotion, such as the academicians, researchers, practitioners and public health specialists. I would like to take this opportunity to express my heartfelt thanks to all the members of the organizing and scientific committees who have given their every effort to make this day a reality. This has set an excellent example of the spontaneous cooperation and coordination in the success of this conference among various stakeholders and health sectors.
I also would like to thank all the partners and supporting agencies who contributed to this conference. On behalf of Ministry of Health and Population (MOHP) and myself as a Chair of the Organising Committee, I would like to thank all partners; Pokhara University, Nepal Health Research Council (NHRC), Council for Technical Education and Vocational Training (CTEVT), Green Tara Nepal, Development Resource Center (DRC Nepal), Society for Local Integrated Development (SOLID Nepal), ASHA/Nepal, Nepal Public Health Foundation, Health Education Association of Nepal (HEAN), Nobel College, Sinamangal, Department of Community Medicine and Public Health, Institute of Medicine, TU, Micro-nutrient Initiative, Chitwan Medical College, Manmohan Memorial College of Health Sciences, MOTIF and Google Treks Nepal Pvt. Ltd. The role of our international partners; Green Tara Trust UK, University of Sheffield, UK and Bournemouth University, UK has been instrumental, for it is they who took the initiative to organise this conference. My special thanks go to Green Tara Nepal; the Conference Secretariat, for it has played a vital role in coordinating with partners and in the preparation of the conference.

I also would like to thank all the external development partners for their full support, both technically and financially. I would like to mention the enormous support from the World Health Organisation, United States Agency for International Development (USAID), United Nations Children Fund (UNICEF), Rural Health Development Project/ Swiss Development Cooperation, Care Nepal, Nepal Health Sector Support Programme, Save the Children and United Mission to Nepal. Furthermore, I'd like to thank our media partner; Meeting point, for its full support and coordination with the media, and Hotel Everest for all the logistical arrangements.

I thank our colleagues from other professional organizations, national and international agencies for honoring us with your participation and I express a deep sense of gratitude to all the speakers, guests and participants for gracing this auspicious occasion.

I would like to stress that health promotion is not only an issue in the present context, but is important for the future. Therefore, I request your full cooperation as we plan for future actions.

I ask for your full cooperation in the success of this conference and hope for concrete outcomes.

Dr. Padam Bahadur Chand  
Chairperson, Organising Committee  
Chief, Policy Planning and International Cooperation Division
MESSAEG FROM SCIENTIFIC COMMITTEE

Dear colleagues,

It gives us great pleasure to be a part of the First National Health Promotion Conference of Nepal, jointly organized by the Ministry of Health and Population and a consortium of national and international partners. Nepal is in social and economic transitions that impact at all levels of society. These substantial challenges require a reflection on the most efficient, effective and equitable ways of supporting and advancing population health and wellbeing. All actors and sectors in society have a vital role to play in the development of equity and social justice. It is therefore critical to better understand and acknowledge the diverse approaches for investing in health from the perspective of various actors, such as the role of grassroots movements, workforce, the public sector, academia or international donors and to explore what are the challenges and opportunities in mobilizing and engaging them.

Health promotion depends on the involvement of the people to take control over their health and actions they take to help each other to cope with the unfavorable conditions. It focuses on achieving equity in health. However, equity remains a major challenge to policy makers despite the resurgence of interest to promote it. This conference is a joint effort where all the concerned bodies such as the government, health, social sectors, national and international organizations have come forward to share their evidence based information and contribute to address the health promotion issues and to reduce the research gap.

These 3 days of the conference would be dedicated towards sharing experiences, technological breakthroughs and updating of the scientific knowledge on best evidence based practices in the field of Health Promotion. The various sessions will provide a mixture of practical lessons from global, regional, national and local experiences. In addition, I would also expect the participants to bring forward their innovative ideas that would further help in assisting the decision makers to change the health policy to improve the health of the people of Nepal.

With this message I would like to wish a grand success of the conference.

Dr. Padam Simkhada
Chair- Scientific Committee
Senior Lecturer and Visiting Professor
School of Health and Related Research
University of Sheffield
United Kingdom
## ORGANIZING COMMITTEE

<table>
<thead>
<tr>
<th>Position</th>
<th>Name and contact</th>
</tr>
</thead>
</table>
| 1. Chairperson | Dr. Padam Bdr. Chand  
Chief, Policy Planning and International cooperation Division  
Ministry of Health and Population, Government of Nepal, Ramshahpath, Kathmandu |
| 2. Co-chairperson | Prof. Dr. Chop Lal Bhushal  
Chairman  
Nepal Health Research Council, Ramshahpath, Kathmandu |
| 3. Member | Badri Bahadur Khadka  
Director  
National Health Education and Communication Center, Teku, Kathmandu |
| 4. Member | Karma Sherpa  
Sr. Officer  
Council for Technical Education and Vocational Training (CTEV)  
Ministry of Education, Sanothimi, Bhaktapur |
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Chief  
Health Section, UNICEF Nepal |
| 7. Member | Representative, UNFPA |
| 8. Member | Representative, DFID |
| 9. Member | Linda Kentro, MPH, MArch  
Environmental & Emergency Health Team Leader  
USAID/Nepal  
U.S. Agency for International Development, Kathmandu, Nepal,  
Tel: (977-1-) 400-7200 Ext: 4231, lkentro@usaid.gov, http://nepal.usaid.gov |
| 10. Member | Representative, NHSSP |
| 11. Member | Representative, FHI360 |
| 12. Member | Representative, Save the Children |
| 13. Member | CARE Nepal |
| 14. Member | Dale Davis  
Country Director  
Helen Keller International Nepal  
P.O. Box: 3752  
Chakupat, Lalitpur, Nepal  
tel: 977-1-5260459, 5260247, 5260837, fax: 977-1-5260459  
www.hki.org |
| 15. Member | Purna Chandra Sharma  
Executive Director  
International Center  
Pokhara University  
P.O. Box: 427, Kashi, Pokhara, Nepal |
| 16. Member | Nawaraj Pandey  
Chairman  
Nobel College, Sinamangal, Kathmandu |
<table>
<thead>
<tr>
<th>Member No.</th>
<th>Name and Title</th>
</tr>
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<tbody>
<tr>
<td>17. Member</td>
<td>Assoc. Prof. Shiva Pd. Sapkota&lt;br&gt;Department of Community Medicine and Public Health&lt;br&gt;Institute of Medicine, TU, Maharajgunj, Kathmandu</td>
</tr>
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<td>Assoc. Prof. Dr. Bhimsen Devkota&lt;br&gt;Chairperson, Development Resource Center (DRC Nepal) and Assoc. Prof., Faculty of Education, TU</td>
</tr>
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<td>19. Member</td>
<td>Dr. Khem Karki&lt;br&gt;Executive Director&lt;br&gt;Society for Local Integrated Development (SOLID Nepal)</td>
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<td>Ram Bahadur Shrestha&lt;br&gt;Executive Director&lt;br&gt;ASHA/Nepal</td>
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<td>21. Member</td>
<td>Representative from Water and Sanitation Programme</td>
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<tr>
<td>22. Member</td>
<td>Dr. Gajanand P Bhandari&lt;br&gt;Director&lt;br&gt;Nepal Public Health Foundation</td>
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<tr>
<td>23. Member</td>
<td>Professor, Dr. Chitra Bdr. Budhathoki,&lt;br&gt;Assistant Dean, Faculty of Education, TU&lt;br&gt;and General Secretary, Health Education Association of Nepal (HEAN)</td>
</tr>
<tr>
<td>24. Member</td>
<td>Dr. Yashovardan Pradhan&lt;br&gt;Chairperson&lt;br&gt;Society of Public Health Physicians Nepal (SOPHIN)</td>
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<tr>
<td>25. Member</td>
<td>Representative, Nepal Public Health Association (NePHA)</td>
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<tr>
<td>26. Member</td>
<td>Representative, Health Journalist Group</td>
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<tr>
<td>27. Member</td>
<td>Dr. Jane Stephens (Karunamati)&lt;br&gt;Director&lt;br&gt;Green Tara Trust UK</td>
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<tr>
<td>28. Member</td>
<td>Dr. Bibha Simkhada&lt;br&gt;International Coordinator&lt;br&gt;Green Tara Nepal</td>
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<tr>
<td>29. Member</td>
<td>Dambar Singh Gurung&lt;br&gt;Programme Manager&lt;br&gt;Rural Health Development Project/ SDC</td>
</tr>
<tr>
<td>30. Member</td>
<td>Raj Nandan Mandal&lt;br&gt;National Programme Officer&lt;br&gt;Micronutrient Initiative&lt;br&gt;Uttardhoka Marg 424/2, 2nd Floor, Lazimpat, Kathmandu, Nepal&lt;br&gt;Tel +977-1- 4001083 Ext 102</td>
</tr>
<tr>
<td>31. Member</td>
<td>Mr. Umesh pandey&lt;br&gt;MoTiF, Naya Baneshwar, Kathmandu</td>
</tr>
</tbody>
</table>
| 32. Member | Mr. Prakash Simkhada  
Executive Director  
GoogleTrek Nepal Ltd.  
Email: info@etreksnepal.com or prakashsimkhada@gmail.com.  
Web: www.etreksnepal.com, Phone:+977 1 4265847 |
|---|---|
| 33. Conference Coordinator | Geeta Sharma  
National Health Promotion Conference  
Green Tara Nepal  
GPO 8974, CPC 158  
977-1-4432698, 9841-298806  
admin@hpconference.org.np, sharmageeta224@gmail.com,  
hpconference.org.np, greentara.org.np |
| 34. Member Secretary | Ram Chandra Silwal  
Secretariat, National Health Promotion Conference &  
Country Programme Director, Green Tara Nepal  
GPO 8974, CPC 158, Kathmandu, Nepal  
Tel: 977-1-4432698, 9841-415889 (mobile)  
e-mail: ram@greentara.org.np, admin@hpconference.org.np  
<table>
<thead>
<tr>
<th>Position</th>
<th>Name and contact</th>
</tr>
</thead>
</table>
| 1. Chairperson| Dr. Padam Simkhada  
Senior Lecturer in International Health  
School of Health and Related Research (ScHARR)  
University of Sheffield Regent Court  
30 Regent Street, Sheffield S1 4DA  
Tel: 0044 (0) 114 222 0752  
Email: p.simkhada@sheffield.ac.uk |
| 2. Co-chairperson | Dr. Babu Ram Marasini  
Senior Health Advisor  
Ministry of Health and Population  
Ramshahpath, Kathmandu |
| 3. Member      | Prof. Rajendra Prasad Wagle  
Head, Department of Community Medicine and Public Health  
Institute of Medicine (IOM), TU, Maharajgunj, Kathmandu |
| 4. Member      | Mr. Shiva Shankar Ghimire  
Director  
Council for Technical Education and Vocational Training (CTEV)  
Ministry of Education, Sanothimi, Bhaktapur |
| 5. Member      | Dr. Shankar Pratap Singh  
Member Secretary  
Nepal Health Research Council (NHRC)  
Ramshahpath, Kathmandu |
| 6. Member      | Prof. Edwin van Teijlingen  
Centre for Midwifery, Maternal & Perinatal Health  
School of Health & Social Care  
Bournemouth House, 19, Christchurch Road  
Bournemouth University, Bournemouth BU1 3LH  
England, UK  
Tel. +44 (0)1202-961564  
Email vanteijlingen@bournemouth.ac.uk  
Honorary Professor, School of Medicine & Dentistry, University of Aberdeen  
Visiting Professor, MMIHS, Tribhuvan University, Nepal  
Visiting Professor, Nobel College, Pokhara University, Nepal  
Honorary Visiting Professor, London Metropolitan, England  
Book review editor Sociological Research Online  
Our work in Nepal is supported by Green Tara Trust: http://www.greentaratrust.com |
| 7. Member      | Prof. Masamine Jimba  
Head, Department of International Health  
Tokyo University, Japan |
| 8. Member      | Prof. Dr. Quazi Sayed Zahiruddin  
Department of Community Medicine  
Jawaharlal Nehru Medical College, India |
| 9. Member      | Prof. Shyam Krishna Maharjan  
Chairperson, Health Education Association of Nepal and  
Prof. Department of Education, TU |
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<tr>
<th>Member</th>
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| 10.     | Prof. Ram Krishna Maharjan  
          SOLID/Nepal and Prof. Department of Education, TU |
| 11.     | Prof. Dr. Muni Raj Chhetri  
          Chitwan Medical College |
| 12.     | Assoc. Prof. Dr. Amod Poudyal  
          Department of Community Medicine and Public Health  
          Institute of Medicine (IOM), TU |
| 13.     | Assoc. Prof. Dr. Bhimsen Devkota  
          Chairperson, Development Resource Center (DRC Nepal)  
          and Assoc. Prof., Faculty of Education, TU |
| 14.     | Assoc. Prof. Krishna Chandra Poudel, Univ. Massachusetts, USA |
| 15.     | Dr. Nirmala Jamarkattel, Programme Director, School of Health and Allied Sciences, Faculty of Science and Technology, Pokhara University |
| 16.     | Representative, WHO |
| 17.     | Representative, UNICEF |
| 18.     | Representative, UNFPA |
| 19.     | Representative, DFID |
| 20.     | Representative, USAID |
| 21.     | Representative, FHI 360 |
| 22.     | M R Maharjan, Micro-Nutrient Initiatives |
| 23.     | Representative, Journalist |
| 24.     | Bimal Phuyal  
          Action Aid Nepal |
| 25.     | Rita Thapa  
          Founder: Tewa - Nepal Women’s Fund & Nagarik Aawaz for Peace |
| 26.     | Dr. Rajendra Kumar BC, PhD |
| 27.     | Sameer M Dixit, MSc (Biotech), PhD  
          Country Director  
          Public Health Research & Disease Surveillance  
          Center for Molecular Dynamics Nepal  
          GPO BOX 21409| Kathmandu| Nepal  
          P: +9771 4251590| www.cmdn.org  
          Team Leader| Nepal Biotechnology Center Project Ministry of Science and Technology  
          Founding Member| Nepal Public Health Foundation |
| 28.     | Dr. Sujan Marahatta  
          Associate/Member, Institute of Public Health Calgary University  
          / Manmohan Memorial Medical College; 2Manmohan Memorial Community Hospital  
          E-mail: sujanmarahatta@gmail.com |
| 29.     | Scientific Committee  
          Secretariat |
| 29.     | Priti Kharel  
          Masters in Public Health  
          The University of Sheffield  
          kharel.prinum@gmail.com |
## MANAGEMENT COMMITTEE

<table>
<thead>
<tr>
<th>Position</th>
<th>Name and representing institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chairperson</td>
<td>Mr. Kabi Raj Khanal, Under Secretary, Policy, Planning and International Cooperation Division, Ministry of Health and Population (MOHP)</td>
</tr>
<tr>
<td>2. Member</td>
<td>Mr. Nawaraj Pandey, Chairman, Nobel College, Sinamangal</td>
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<td>Mr. Praksah Simkhada, Google Trek Nepal</td>
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<tr>
<td>7. Member</td>
<td>Mr. Ram Chandra Silwal, Country Programme Director, Green Tara Nepal</td>
</tr>
<tr>
<td>8. Member</td>
<td>Ms. Geeta Sharma, Coordinator, Health Promotion Conference, Green Tara Nepal</td>
</tr>
<tr>
<td>ORGANIZERS</td>
<td>Address</td>
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<tr>
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<tr>
<td>Ministry of Health and Population&lt;br&gt;Ram Shah Path, Kathmandu&lt;br&gt;Ph: 426 4250, 426 4301&lt;br&gt;Web: <a href="http://www.nhssp.org.np">www.nhssp.org.np</a></td>
<td></td>
</tr>
<tr>
<td>Pokhara University&lt;br&gt;Central Office&lt;br&gt;Post Box: 427, Lekhnath-12, Khudi, Dhungepatan&lt;br&gt;Kaski, Nepal.&lt;br&gt;Tel: 977-61-561046 / 560639, Fax: 977-61-560392 / 561047&lt;br&gt;Email: <a href="mailto:info@pu.edu.np">info@pu.edu.np</a>&lt;br&gt;Web: <a href="http://www.pu.edu.np">www.pu.edu.np</a></td>
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<td>Nepal Health Research Council&lt;br&gt;Ramshah Path,&lt;br&gt;P.O.Box 7626&lt;br&gt;Kathmandu, Nepal&lt;br&gt;Telephone: 977-1-4254220/4227460&lt;br&gt;Fax: 977-1-4262469/4268284&lt;br&gt;Email Address: <a href="mailto:nhrc@nhrc.org.np">nhrc@nhrc.org.np</a></td>
<td></td>
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<tr>
<td>Council for Technical Education &amp; Vocational Training (CTEVT) Sanothimi Bhaktapur, Nepal&lt;br&gt;Phone: +977-1-6630408&lt;br&gt;+977-1-6630769&lt;br&gt;Fax: +977-1-6630294&lt;br&gt;E-mail: <a href="mailto:admin@ctevt.wlink.com.np">admin@ctevt.wlink.com.np</a>&lt;br&gt;<a href="mailto:research@ctevt.org.np">research@ctevt.org.np</a>&lt;br&gt;P.O. Box: 3546, Kathmandu Nepal&lt;br&gt;Web: <a href="http://www.ctevt.org.np">www.ctevt.org.np</a></td>
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<tr>
<td>Green Tara Nepal&lt;br&gt;GPO 8974, CPC 158&lt;br&gt;Kathmandu, nepal&lt;br&gt;977-1-4432698, 9841415889&lt;br&gt;E-mail: <a href="mailto:gtn@wlink.com.np">gtn@wlink.com.np</a> <a href="mailto:ram@greentara.org.np">ram@greentara.org.np</a>&lt;br&gt;Web: <a href="http://www.greentara.org.np">www.greentara.org.np</a></td>
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<tr>
<td>Development Resource Centre (DRC) Teku, Kathmandu&lt;br&gt;P.O. Box: 8975&lt;br&gt;EPC: 2582&lt;br&gt;Tel. 01-4263547&lt;br&gt;E-mail: <a href="mailto:drcc@wlink.com.np">drcc@wlink.com.np</a>&lt;br&gt;Web: <a href="http://www.drc.org.np">www.drc.org.np</a></td>
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<tr>
<td>Society for Local Integrated Development Nepal (SOLID Nepal) GPO. Box: 519 Kathmandu Nepal&lt;br&gt;Tel: 5-548455, Fax: 5-553770&lt;br&gt;Email: <a href="mailto:solidnepal@wlink.com.np">solidnepal@wlink.com.np</a>&lt;br&gt;Web: <a href="http://www.solidnepal.org.np">www.solidnepal.org.np</a></td>
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<td>Organization</td>
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</tr>
<tr>
<td>ASHA NEPAL</td>
<td>Office location: Babarmahal, Kathmandu G.P.O. Box: GPO 8973, N.P.C. 116, Kathmandu, Nepal Tel: +977-1- 4222769 E-mail: <a href="mailto:ashanepal1@gmail.com">ashanepal1@gmail.com</a> <a href="mailto:info@asha-nepal.org.np">info@asha-nepal.org.np</a> Web: asha-nepal.org.np</td>
</tr>
<tr>
<td>Nepal Public Health Foundation</td>
<td>101/2 Dhara Margh, Maharajgunj, Kathmandu-4. PO.BOX 11218, Phone: 977-1-4412787, 4410826 Fax: 977-1-4412870 Email : <a href="mailto:info@nphfoundation.org">info@nphfoundation.org</a> Web: <a href="http://www.nphfoundation.org">www.nphfoundation.org</a>,</td>
</tr>
<tr>
<td>Health Education Association of Nepal</td>
<td>Kirtipur Kathmandu</td>
</tr>
<tr>
<td>Nobel College</td>
<td>Sinamangal, Kathmandu, Nepal Tel: 01-4110525, 01-4110590 Fax: +977-1-4110880 GPO: 10420 E-mail: <a href="mailto:info@nobelcollege.edu.np">info@nobelcollege.edu.np</a> Web: <a href="http://www.nobelcollege.edu.np">www.nobelcollege.edu.np</a></td>
</tr>
<tr>
<td>Department of Community Medicine and Public Health</td>
<td>Institute of Medicine Tribhuvan University Maharajgunj, P.O.BOX 1524 Kathmandu, Nepal Web: <a href="http://www.iom.edu.np">www.iom.edu.np</a></td>
</tr>
<tr>
<td>Micro-Nutrient Initiative</td>
<td>Uttar Dhoka Marg, 424/2, 2nd floor Lazimpat, Kathmandu P.O. Box 23874 Tel: +977 1 4001083 Fax: +977 1 4001084 Web: <a href="http://www.micronutrient.org">www.micronutrient.org</a></td>
</tr>
<tr>
<td>Chitwan Medical College (p) ltd.</td>
<td>Bharatpur-13 Chitwan, Nepal P.O.Box No.: - 42 Tel: + 056-592366 Fax: + 056-592364 Email: <a href="mailto:info@cmc.edu.np">info@cmc.edu.np</a> Website: <a href="http://www.cmc.edu.np">www.cmc.edu.np</a></td>
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<tr>
<td>Manmohan Memorial Institute of Health Sciences</td>
<td>Banasthali, Kathmandu, Nepal</td>
</tr>
<tr>
<td>Mr. Prakash Simkhada</td>
<td>Executive Director</td>
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<tr>
<td>Green Tara Trust</td>
<td>Email: <a href="mailto:doctorjane99@hotmail.com">doctorjane99@hotmail.com</a></td>
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| ![Logo](image1) | **Swiss Cooperation Office Nepal**  
Jawalakhel, Ekantakuna  
P.O. Box – 113, Kathmandu - Nepal  
Phone  +977 155 24927, Fax  +977 155 25358  
Email  kathmandu@sdc.net  
Web:  [www.swiss-cooperation.admin.ch/nepal/](http://www.swiss-cooperation.admin.ch/nepal/) |
| ![Logo](image2) | **UNICEF**  
United Nations House  
Harihar Bhawan, Pulchowk  
Lalitpur, Nepal  
P.O. Box 1187, Pulchowk, Kathmandu, Nepal  
Email:kathmandu@unicef.org |
| ![Logo](image3) | **CARE Nepal**  
Krishna Galli  
P.O. Box 1661, Kathmandu, NEPAL  
Tel: 977-1-5522800  
Fax: 977-1- 5521202  
E-mail:carenepal@np.care.org  
Web:  [www.carenepal.org](http://www.carenepal.org) |
| ![Logo](image4) | **Save the Children Nepal Country Office**  
Sinamangal, Kathmandu  
Shree Krishna Bhawan, Airport Gate, Shambhu Marga  
Sinamangal, Kathmandu, Nepal  
Tel +977-1-4468128 , Fax: 977-01-4468132  
Web:  [www.savethechildren.net](http://www.savethechildren.net) |
| ![Logo](image5) | **Head Office**  
Ministry of Health and Population  
Ram Shah Path, Kathmandu  
Web:  [www.nhssp.org.np](http://www.nhssp.org.np) |
| ![Logo](image6) | **United Mission to Nepal**  
PO Box 126  
Kathmandu, Nepal  
Phone: (00977 1) 4228 118, 4268 900  
Fax: (00977 1) 4225 559  
Emails:umn@umn.org.np  
Web:  [www.umn.org.np](http://www.umn.org.np) |

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| ![Logo](image7) | **Meeting Point Pvt. Ltd.**  
Lazimpat, Kathmandu.  
Tel : 01-4003600, 4003601, Fax : 4003602  
Email : meetingpoint11@gmail.com |
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EVIDENCE BASED ADVOCACY THROUGH COMMUNITY SCORE CARD

Govind Prasad Acharya¹
¹ActionAid International Nepal
Email: govinda.acharya@actionaid.org

Background: ActionAid International Nepal (AAIN) is an anti-poverty organization working in Nepal since 1982. It recognizes human rights based approach as central to the fight against poverty. Just and democratic governance and pro-poor polices are central to ensure human rights. So the interventions are focused on increasing access to poor and marginalized communities in formal governance mechanisms. Among the various aspects of governance engagement, health governance is one of the major areas. ‘Citizens action for improving basic health services’ and ensuring effective and accountable basic free health care services to the right holders at a local level is the focus of health governance work. AAIN has been working in health governance through its 16 local partners. Broadly they have been using Community Score Card (CSC) process as a tool to improve basic health service. The tool has major four components:
- input tracking scorecard
- community evaluation of service
- service providers self-evaluation
- interface meeting (joint assessment)

Methods: Community Score Card (CSC) has proved itself as a meaningful tool for evidence based advocacy for the improvement of local health services. It is a useful participatory tool for constructive state-citizen relationships. Through this method the service providers and the service seekers both evaluate the quality and quantity of services provided and received. The tool minutely looks at accountability, accessibility, transparency and behavioural aspects of both.

In order to do these evaluations the indicators are prepared beforehand and evaluated during a group meeting. The REFLECT (Regenerated Freirean Literacy through Empowering Community Techniques) centers are adding value as a forum of knowledge sharing and generating where the policies and provisions are discussed minutely. The general citizen evaluates the service according to their experience of receiving the service. The score varies on the satisfaction of the citizens; a higher score indicating a great deal of satisfaction and a lower score inferring dissatisfaction. They also justify their feelings by providing statements and evidence for scoring. At the same time, service providers do the self-evaluation of their own service. Evaluation done by both discussed in the joint forum (first assessment) where both the parties share each other scores and experiences.

After this the plan of improvement will be prepared and the groups for monitoring are assigned to ensure implementation of plan. Again, similar evaluations and joint assessments against the plan of improvement can be done to re-assess the health service after a certain time.

Results: The community score card process helped facilitators, community and service providers assess the quality and quantity of local health facilities through using the following indicators: opening time, presence of health worker, skilled health worker, availability of medicines, quality of medicines, behaviour of health worker towards patients, referral service, role of health management committee, patients compliance to drug regimen and health worker’s suggestion and the communities ownership on health service etc.

AWARENESS ON ILL EFFECTS OF SMOKING AMONG ADULT SMOKING WOMEN AT GALESHWORCHOWK, RAMBAZAAR-15, POKHARA

Angita Adhikari¹, Anisha Adhikari²
¹Janahit Training and Trading, ²Pokhara University
email: consideransu@yahoo.co.nz

Background: Smoking is the major cause of an early death. It accounts for about one-third of all cancers, including 90% of lung cancer cases and causes a death every 30 minutes. On average, women who smoke die 14.5 years sooner than non-smokers. Female smokers aged 35 or older are almost 13 times more likely to die from emphysema or bronchitis. Awareness study on ill effects is important in Nepal as the prevalence of smoking is as high as 38.4% (WHO, Nepal). The purpose of the study is to assess the level of knowledge on ill effects of smoking among smoking women and factors associated with it.
Methods: A cross sectional study was carried out among 50 adult female smokers selected purposely from 240 households residing in Galeshwor chowk, Rambazaar-15. Structured interview schedule was designed to elicit the information on knowledge and socio-demographic characteristics of the respondents. Descriptive and Inferential statistics was applied to know the associations of knowledge with different variables.

Results: Majority of the respondents were illiterate (82%). Almost three fifth (60%) of the respondents were farmers. Two thirds (66%) of the respondents had a family history of smoking. About 62% of the respondents used to take less than 5 cigarettes per day. Majority (62%) of the respondents had started smoking 4 years prior to the study. The result shows that 6% (3) had inadequate knowledge, 86% (43) had moderate knowledge and 8% (4) had adequate knowledge on ill effects of smoking. There was no significant association between the level of knowledge and demographic variables.

Conclusion: Majority of the respondents had moderate knowledge on ill effects of smoking and the level of knowledge was independent with socio demographic variables. Community based intervention programmes regarding ill effects of smoking have to be launched through governmental and non governmental agencies.

TRENDS OF STIGMA IN LEPROSY – THE ROLE OF SOCIETY

Bipin Adhikari¹, Robert Sedgwick Chapman¹, Nils Kaehler¹, Shristi Raut²
¹College of Public Health Sciences, Chulalongkorn University, Bangkok, Thailand, and ²Faculty of Microbiology, Manipal College of Medical Sciences, Pokhara, Nepal

Email: biopion@gmail.com

Background: Stigma is a social process of interpretation towards an attribute. Every illness in a society has its own set of interpretations. Societal interpretation of Leprosy in Nepal has been deeply rooted to the stereotype which has followed since the civilization. The role of society in constructing the stigma in leprosy is much higher than the attribute of the disease itself. The psychosocial impact a person has to bear in a society after the diagnosis weighs heavier than the physical afflictions it causes which does not get cured with the mere medical treatment.

Methods: 20 people affected with Leprosy were interviewed in 2 different sets of focus group discussions as well as individual interview was conducted using Explanatory Model Interview Catalogue, questionnaire in Nepal.

Results: Fear of the discrimination on disclosure of the disease was often reported. The most reported cause of fear was the strongly rooted stereotype attached to the disease. The false belief on transmission was the other mostly reported reason for the prevalent views towards Leprosy and the reasons of their separation, isolation and rejection from family members, friends and society. In addition to these impacts on the individual, the frequently reported reasons for the marriage problems in leprosy affected persons and their relatives were the false belief that “Leprosy is highly contagious, could be transmitted to the siblings,” myths attached to the disease and visual deformities.

Conclusion: The deeply-rooted negative stereotypes attached to the disease, has accentuated the social process of concealment of the disease followed by the adverse consequences in leprosy affected persons. Despite that negative stereotypes attached to this disease are globally decreasing yet the remote impending fear persists. There is a need for 1) more health education programs targeting all kinds of population and 2) continuing psychosocial support to the ex-leprosy and current leprosy affected persons as medical cure of leprosy does not alleviate the vast cradle of ignorance and negative stereotypes attached to this disease.
STUDENTS’ STAGES OF SELF AWARENESS AND EMPATHY SKILLS AND PREVALENCE OF LIKELY DEPRESSION

Chiranjivi Adhikari1; Bhattarai KD2; Gartoulla RP2; Onta S2; Wagle RR2; Poudyal AK2
1Pokhara University, School of Health & Allied Sciences; and 2Department of Community Medicine & Public Health, Institute of Medicine, TU
Email: chiranadhikari@gmail.com

Background: There are six pairs of generic life skills and one of the pairs is Self Awareness and Empathy Skills (SAES). It includes two skills; self-awareness and empathy. Self-awareness is the perception and understanding of feeling, idea, emotion and control of emotion. Empathy is the ability to understand others’ feelings. As from literature, skills have their stages but the stages of life skills are unknown. This study aims to find out the stages of SAES and relationship of the stages with likely depression. Mental, neurological and substance use disorders exact a high toll on health outcomes, accounting for 13% of the total global burden of disease. Depression alone accounts for 4.3% of the global burden of disease and is among the largest single causes of disability worldwide (11% of all years lived with disability globally). The purpose of this study was to find out the five stages of SAES and to find out whether the various stages significantly differ in prevalence of likely depression.

Methods: The cross sectional study was carried out in the schools among the students from grade eight to ten of Kailali district in two-stage sampling method. A self-administrable questionnaire was developed to assess the stages of SAES and WHO-5 wellbeing. One question (of single indicator) to find out the stages of SAES and five statements for WHO-5 wellbeing in a six point likert scale (scores zero through five; zero meaning at no time and five meaning all the time) were asked. The zero percent score represents the worst possible and 100% represents the best possible. A percentage score of ≤ 28 (score ≤ 7) represents likely depression and the need for further assessment. Total students were 596, of which 595 returned the questionnaire, indicating negligible non-response rate (0.2%). For the sake of criterion-related validity, however, only 583 respondents were entered in the pool of data for inferential statistical analysis. Age below 12 years and above 18 years was excluded. In descriptive analyses, median, percentage and inter-quartile range were done and in inferential statistics, chi-square test was done.

Results: Students were found in various proportions and in increasing trend in progressive stages for SAES. It revealed that 3.4% (n=19) in precontemplation; 21.7% (n=124) in contemplation; 12.8% (n=74) in preparation; 13.3% (n=78) in action and almost half (48.9%; n=288) in maintenance. The proportion is significant ($X^2$ statistic= 160.5, $p<0.001$) but the distribution of students was not normally distributed (Kolmogorov-Smirnov test; statistic=0.30, $p<0.001$). The median WHO-5 wellbeing score found to be 19 (IQR, 15-21), 16 (IQR, 13-19), 17 (IQR, 14-20), 17 (IQR, 15-19.3) and 18 (IQR, 15-21) in precontemplation through maintenance stages respectively. The change difference of median in precontemplation and contemplation is minus (-) 15.8%; in contemplation and preparation is 6.3%; in preparation and action is 0% and in action and maintenance is 5.9%. The prevalence of likely depression was found 0% in precontemplation; 2.4% in contemplation; 4.1% in preparation; 1.3% in action and 1.4% in maintenance stages. The overall prevalence of likely depression was found to be 1.9% (n=583) in all the students.

Conclusion: The unequal distribution of students in five progressive stages is found to be consistent with previous studies, indicating that the SAES also has stages. However, the difference in proportion of scores is not significant within the stages (i.e., less than 10%) which may be due to non-normal distribution of samples and/or the selection of single indicator for SAES. Hence the stronger design or the increased sample size and/or the multiple indicators for SAES are recommended.

FOOD HYGIENE AND SANITATION: INTEGRAL TO SUSTAINABLE TOTAL SANITATION

Kamal Adhikari1
1Global Sanitation Fund Program, UN-Habitat Nepal
Email: kamal.anthro@gmail.com

The rationale of food hygiene and sanitation for achieving sustainable total sanitation and public health promotion here is based on the review of limited literatures. Total sanitation aims to achieve universal access to safe excreta disposal leading to open defecation free situation in a given area. In Nepal; four districts, six municipalities and
seven hundred three Village Development Committees have been declared as an open defecation free areas as of 5 March 2013. In the sanitation sector, a popular notion of open defecation free campaign has created an accelerated motion for scaling up toilet coverage. These days, open defecation free campaign appears in the form of social movements and people often find themselves ‘glorified’ whenever their village becomes open defecation free. There is a commonly held belief that there will be considerable reduction in morbidity as well as mortality and significant improvement in public health once a community attains open defecation free situation. Thus, all sanitation promoters are solely dedicated to achieve open defecation free situation.

Although sanitation is a cross-cutting theme of health, nutrition and education; the ongoing total sanitation approach lacks this holistic perspective especially at operational levels. Some studies suggest that food hygiene and sanitation need special consideration for minimizing diarrhoeal diseases and maximizing health benefits from the total sanitation interventions. Likewise, the level of reduction in mortality and morbidity is not found at the desired level even in open defecation free declared areas. A survey conducted by the Department of Water Supply and Sewerage, and WHO in 2005 across the roadside hotels and restaurants shows that only 17% of the samples (out of 100) of water served to the clients were free from e-coli. In some places, the content of e-coli was as high as 5500 in 100 ml water. Likewise, 22% of clients (out of 100) suffered from diarrhoea, dysentery and food poisoning due to food in the roadside hotels and restaurants even though these food outlets possessed adequate toilet and hand washing facilities. Similarly, as per the sub-health post records the reported cases of diarrhoea in children under five in open defecation free declared area in Dhikpur Village Development Committee in Dang district decreased by 2% from 7% in 2005 to less than 5% in 2007. It substantiates that the role of open defecation free situation alone is not sufficient to ensure health benefits from sanitation interventions. Among other factors, it might be due to low priority given with regard to personal hygiene and food hygiene. The scope of total sanitation should therefore be redefined from mere open defecation free situation to a holistic package comprising of personal hygiene, food hygiene, safe excreta management and environmental cleanliness for ensuring sustainable total sanitation and maximizing health and other socio-economic benefits.

FACTORS ASSOCIATED WITH THE INTRODUCTION OF PRELACTEAL FEEDS IN NEPAL: FINDINGS FROM NEPAL DEMOGRAPHIC AND HEALTH SURVEY 2011

Mandira Adhikari1, Vishnu Khanal2

1Population Services International, Nawalparasi, Chitwan, Nepal and 2School of Public Health, Curtin University, Western Australia.
E-mail: adhikarimandira2013@gmail.com

Introduction: Prelacteal feed is any food except mother’s milk provided to a newborn before initiating breastfeeding. Prelacteal feeding is a major barrier to exclusive breastfeeding; yet is prevalent practice in Nepal. The factors associated with providing prelacteal feeds to the Nepalese newborn, however are not known. This study aimed at reporting the factors associated with providing prelacteal feeds in Nepal based on Nepal Demographic and Health Survey (NDHS) 2011 among young children ≤23 months.

Method: This study utilised the child dataset of NDHS 2011 and children aged ≤23 months were included. The rate of providing prelacteal feeds were reported as frequency (%). Chi-square test was used to find the association of the categorical independent variables with the introduction of prelacteal feeds. Statistically significant variable in Chi-square test were included in a multiple logistic regression model after controlling for potential confounders. A p-value <0.05 was considered statistically significant.

Result: There were 3948 mothers with children aged ≤23 months; only 7.4% were adolescents at their last pregnancy, slightly less than a half had no education (43.1%), and the majority (61.2%) were working in the agriculture sector. Six in ten (60.2%) births occured at home. Only half (53.1%) of mothers had attended four or more antenatal care visits during their last pregnancy.

A total of 841 (21.3%) of mothers reported of providing prelacteal feeds to their children. The mothers who had no education, were unemployed, overweight (body mass index ≥25kg/m^2), did not attend four antenatal care visits, first time mothers, mothers who perceived their baby were smaller than average size and finally those from the Terai region were more likely to provide prelacteal feeds than their counterparts.

Conclusion: Given that one-in-five children were provided with prelacteal feeds, there is a need to implement breastfeeding promotion programs to increase the practice of exclusive breastfeeding by reducing the introduction of prelacteal feeds. Furthermore, breastfeeding counselling at antenatal clinics; and peer support for exclusive
breastfeeding needs to be included as part of breastfeeding promotion program. Mobilisation of the Female Community Health Volunteers for peer counselling is also a feasible option for Nepal.

**Keyword:** breastfeeding, prelacteal feed, breastfeeding promotion programs, Nepal, and maternal health.

**AUTISM: AN URGENT NEED FOR PUBLIC HEALTH APPROACH IN NEPAL**

**Sunita Maleku Amatya**

1AutismCare Nepal

E-mail: autismnepal@gmail.com

Autism spectrum disorder (ASD) is a developmental neurological disorder characterized by deficits in social behavior and communication, and a restricted range of activities. ASD transcends social, cultural and geographic boundaries. An estimated one in 88 children in the world is diagnosed with Autism. Some individuals have strong intellectual and language abilities, whereas others require life-long care. Early diagnosis followed by early intervention can make a big difference on the prognosis of that particular child. ASDs occur in all racial, ethnic, and socioeconomic groups, but are almost five times more common among boys than among girls. The prevalence of Autism is estimated at 8 million in India and in Sri Lanka is 2,00,000. This indicates that Autism is also not uncommon in our part of the world.

AutismCare Nepal was registered as a non-governmental organization on 2 April 2008 on the auspicious occasion of the World Autism Awareness Day. It is the one of the only active autism organization in Nepal that is run by passionate parents that care for people with Autism.

On 21st January 2008, a resolution was adopted by The General Assembly of United Nation in which it has designated April 2nd as World Autism Awareness Day and has put Autism on a different level from other disabilities. This Resolution requests the Secretary-General to bring the present resolution to the attention of all Member States and United Nations organizations. In 2011, Autism Speaks;a U.S based organization, along with WHO launched Global public Health Initiation in Dhaka, Bangladesh which took initiation to raise awareness of Autism among the South Asian Region and to find out the public health burden Autism can have in these part of the world.

WHO in September 2012 confirmed Autism as being a Global public Health crisis and adopted separation of Autism from other mental health disorders and showed concern of its growing prevalence. There is a need for a public health approach to have proper understanding of the situation of autism in each country, which will guide us to understand its public health burden. There is a need for developing countries to specifically plan an outreach programme, awareness campaign, and advocacy policies.

A major barrier to improving the health and wellbeing of children and families touched by autism is the lack of Awareness, knowledge and expertise. This limits access to care and early intervention and impedes the development of appropriate public health programs that can improve the quality of life for individuals with ASD and their families. These challenges are further complicated by a shortage of experts and trained professionals.

In 2011 a preliminary surveillance was conducted in most of the hospitals and disability related centers in Kathmandu valley. 107 children with Autism were recognized by this preliminary report. In order to understand this growing public health issue in our country, we need to have a further prevalence study. Along with it there is a growing need to develop relevant human resources to educate and train this growing number of people with Autism.

**HEALTH PROMOTION IN SCHOOLS THROUGH HEALTHY TEACHERS**

**Bhagwan Aryal**

1Department of Health, Physical and Population Education, Central Department of Education, Tribhuvan University, Kathmandu, Nepal

Email: bhagwanaryal@hotmail.com

**Issues:** Health promotion (HP) in school is a neglected area in Nepalese context. Though, some of the programs like child friendly school, school health and nutrition initiatives, school led total sanitation etc are in creeping stage,
they do not address teacher’s health in general. One of the powerful implementer of HP in schools is a teacher, whose health is always paid less attention. Schools are, however, ideal places for HP, as they employ significant numbers of adults and there is the likely for these adults to serve as role models for students and to foster a health-promoting living environment. As anticipated, the mental and physical health of school staff affect students directly through the quality of teaching and the attributes of the school’s psychosocial environment. On the other hand, if healthy teachers are absent in schools, no school health programs can achieve success.

**Descriptions**: Healthy teachers are true role models of thousands of students in many aspects and conducts of life. Students are always interested to get deeper into teacher’s deeds and know them. This knowing may be on health related aspects which may later on develop into healthy attitude and right change in behavior if they perceive their teachers as a healthy role model.

School teacher in any nation is one of the most valuable workforces that nurtures and substantially shapes each and every generation. There are 34361 registered schools which employ 275017 teachers in all levels of institutional and community schools of Nepal (DoE, 2011). This number of teachers is the role model of a total of 7797472 students in many aspects including health and learning. This number of teachers is the role model of those students who are in touch with their teachers in a daily basis for around 6 to 8 hours. Students observe their teachers health behavior and are influenced. Unfortunately the school teachers are susceptible to many of the health problems that interfere with the success of the students because the teachers become absent frequent and present poor role modeling in health.

The active promotion of the health and well being of school staff is one of the 12 criteria according to WHO for the schools to work towards to become ‘Health Promoting Schools’. The school teachers are the important persons to ensure organizational health as they can self be healthy and become healthy role model for students.

It is well understood fact that organizational health can be ensured only when all the school staffs, students and administrators are healthy and actively participating in HP activities. Until recently, school programs have concentrated on the health education aspects of HP, developing the knowledge and skills of the pupils in the classroom and have paid less attention to the impact that schools as organizations and communities have on the health of their pupils.

Recently, School health programs for students are implemented in the world and partially in Nepal but it may be unfair and perchance more difficult, to implement school health programs for students if we do not offer the similar programs for the school employees. The ‘HP in school’ concept will only be successful if teachers can understand, interpret and shape it to meet the needs of their school community.

**Lessons learned**: Teachers are supportive to the advancement of educational scenario of every nation. Nevertheless, their effort put in educational development depends largely on their personal health and the working condition of the school. It should be recognized that advance in education depends largely on the qualifications and ability of the teaching staff in general and on the human, pedagogical and technical qualities of the individual teachers. A healthy school teacher can model his/her behavior as per the students’ perspective. As there is much scope created for the interaction of a teacher with students within the school hours, he/she must build a trust worthy relationship and nurture students in a healthy way. Being self healthy is one of the pertinent methods of persuading students to be healthy, as the later learn by observation. The context mentioned so far reveals the fact that there is a need of implementation of such programs that will cheaply and effectively establish a better organizational health status within the school. This may be the HP Program for teachers.

**Recommendations**: Instead of focusing on only on popularistic school health programs for students, government and developmental agencies should execute HP programs for teachers to strengthen and enable them in promoting health so that they will enthusiastically support ‘health promotion in schools’.

**KNOWLEDGE AND PRACTICE ON SELF CARE MANAGEMENT OF DIABETES AMONG TYPE-2 DIABETIC PATIENTS VISITING OUTPATIENT CLINICS OF KATHMANDU VALLEY**

Nikita Baiju¹

¹Nobel College, Sinamangal

**Background**: Diabetes is increasingly becoming a major public health problem in developing countries, such as Nepal. Poor awareness and practices among diabetic patients are some of the important factors influencing the
progression of diabetes and its complications; which are largely preventable. Self-care management of diabetes is multidimensional. It is the fundamental element in secondary prevention of diabetes and is believed to play an important role in disease management.

Objective: The objective of this study was to assess the knowledge and practice on self-care management of diabetes among diabetic patients visiting out-patient clinics of Kathmandu Valley.

Methods: Analytical cross-sectional survey was conducted among diabetic patients visiting two major outpatient clinics in Kathmandu valley. The sample was selected by non-probability purposive sampling method. Data was collected from patients’ interview, discussion with their family members and viewing medical prescriptions and other records. Data entry and analysis was done using Epi-data and SPSS 16.0. Categorical variables were compared using Chi Square Test and Odds ratio was calculated to measure the associations.

Results: A total of 208 respondents were included in the study. Their age ranged from 25 to 88 years, mean 55.81 years. Only 9% had no knowledge on self-care practice. Most people (94%) changed their dietary pattern after the onset of disease, 78% had the practice of exercising and 77% practiced foot care. 90% of the people had good compliance of medicine intake while 45% of the respondents had the practice of checking their blood sugar monthly. 11% had a smoking habit while 18% had the habit of drinking alcohol. Only 42% had a controlled glycemic level, while 49% were centrally obese; among which 80% were females. The practice of exercise and compliance of medicine intake are seen to be associated with controlling glycemic levels, while smoking is considered inversely associated with the glycemic level.

Conclusion: The overall study of diabetes shows that the knowledge and practice on self-care among diabetic patients is good. There should be effort to conduct diabetes research at the national level and clinical trials are required to clarify the exact knowledge and practice on self-care among patients.

STRENGTHENING PEER EDUCATION SYSTEM TO PROMOTE SEXUAL AND REPRODUCTIVE HEALTH OF YOUNG PEOPLE

Kamal Tara Bajracharya 1
1 Family Planning Association of Nepal
E-mail: sexualityproject@fpang.org.np

Background: Young people tend to share their experiences, curiosities and concerns to their peers regarding sex, sexuality, sexual and reproductive health (SRH) and family planning. Ideally, the peer education system is considered to be flexible, rooted in the realities of individual communities, and these can be used in variety of settings. In addition, it provides less communication channels and steps resulting towards reduced language barriers. Though peer education system is not new in its history, Family Planning Association of Nepal recently has implemented a project in 4 districts of Nepal targeting out-of-school young people. Funding for this project was provided by the Government of Denmark (DANIDA) through International Planned Parenthood Federation. The objective of this study was to elucidate the effectiveness of the peer education system targeted towards out-of-school adolescents and young people and their sexual and reproductive health.

Methods: A mixed method evaluation was carried out. Five focus group discussions of boys and girls were held among peer educators, who were facilitating in their respective Village Development Committees. The age group of the participants ranged from 17-24 years with experience as a peer educator from 1 month to 3 years. Peer group leaders and peer group members were interviewed using semi-structured interview guidelines. Among 117 respondents, 93% were female and one-fifth of them had only primary education. All the quantitative data were was coded in SPSS for the analysis. Results were generated through cross-tabulation of the different variables.

Results: Peer education system was found effective to increase knowledge and skills regarding sexual and reproductive health. More than two third (71%) of the peer group members revealed they held a monthly meeting to discuss their concerns. During the meeting, they discussed several SRH issues such as HIV/AIDS, delayed marriage, gender-based violence, sexuality and relationships, menstruation, sex organs and issues of concern for youth. Nearly half (47%) of the group meetings would last 1-2 hours. Ninety six percent of them stated that they would recommend other peers to join; 90% had a positive response from their family members and 70% of them revealed the program was effective towards protecting their rights. Seventy percent of the youths benefitted from counseling, 32% with services and 23% with referrals. The respondents revealed the changes towards several aspects such as breaking social barriers, expanding knowledge, creating gender sensitivity and right based approach and gaining
support from peers, increasing health seeking behavior and skills on responsible and safe sexual behaviour.

**Conclusion:** The results showed the effectiveness of the peer education system in terms of enhancing knowledge, reducing myths and misconceptions and gaining support from other stakeholders. Adolescents and youths were actively engaged in organizing meetings and supporting other youths. The expansion of the peer education system is plausible to improve sexual and reproductive health of school attending and out of school youths both from both sexes. We suggest a scaling-up in other settings and communities.

**Keywords:** Adolescents and youths, sex, reproductive health, mixed methods, evaluation and family planning.

**FACTORS AFFECTING UTILISATION OF SKILLED BIRTH ATTENDANTS IN A WESTERN HILL DISTRICT OF RURAL NEPAL - A MIXED METHOD STUDY**

1Faculty of Social Sciences and Humanities, London Metropolitan University
E-mail:baral_yubaraj@hotmail.co.uk

**Background:** The proportion of deliveries where skilled attendance care is used is one of the indicators of the progress of Millennium Development Goal 5 (MDG5) to improve maternal morbidity and mortality. All women need skilled maternity care in pregnancy, childbirth and after delivery. Worldwide, however, one third of births take place without the assistance of a skilled birth attendant (SBA). In developed countries the majority of births are assisted by skilled attendants, but in Nepal it is only 36%; and this rate is much higher in rural areas. The aim of the study was to explore the women’s experiences and perceptions of using skilled birth attendants for delivery in a western hill district of Nepal. This study was designed: (a) to explore the factors affecting the use of skilled birth attendants for delivery in a western hill district of Nepal; (b) to explore women’s perceptions in the use of skilled birth attendants during the labour and delivery and (c) to explore the women's experiences and choice of skilled birth attendants services during pregnancy, labour and delivery.

**Methods:** A mixed methods design was utilised to address the research aim with a case study approach. The quantitative information was collected using self-administered structured survey questionnaires to the doctor, nurse and midwives in a private and a public hospital. Qualitative data was collected using semi-structure face-to-face interviews with women aged 18-49 years who had given birth within three years at the time of interview. Study site was a rural area in the western hill district of Nepal. All interviews were undertaken in Nepali and digital recorded with confidentiality ensured.

**Results:** This study explores the different factors influencing SBA use, they are: (1) women’s individual characteristics, perceptions and experiences, (2) economic, family and community influence in service use, (3) attitudes for and nature and quality of service, (4) Gender roles and cultural aspects of services, (5) access to SBA services relative to women’s socio-economic positions and, political situation, (6) changing society views through traditional to modern e.g. living in nuclear family system, modern views in the younger generation on health services, and inequalities in health service distribution. Moreover, women’s individual characteristics such as age of the mother, parity, and number of living children, women's previous pregnancy history, women's educational and employment status, caste/ethnicity including costs of service and health service delivery system are factors influenced SBA use during pregnancy and childbirth.

**Conclusions:** The findings of the study show that different factors namely: individual characteristics such as age, education, employment, household position, knowledge and attitude; interpersonal relationships, family, friends, neighbours, co-workers, and their links; and organisational factors, the role of different organisations, school, university, different groups of people, community and professional groups affect service use. Furthermore, community factors such as family, relationships between community groups and social networks and wider public health policies, and procedures, such as transportation policy, economic policy and incentive policy, influence maternal health service use.

**Keywords:** maternal health service use, promotion programs, mixed methods, skilled birth attendant, and Millennium Development Goal 5.
DISTRICT HEALTH SYSTEMS STRENGTHENING: A CRITICAL PREREQUISITE FOR EFFECTIVE HEALTH PROMOTION

Ashma Baruwal, Duncan Smith-Rohrberg Maru, Jason Andrews and et al.

Issue: Health promotion is more than educational and motivational techniques to improve health behaviours. It is part of an integrated health system that supports preventative and curative health that extends from the community level to primary and hospital based health services. This paper discusses a hospital based health promotion system that builds upon and strengthens health posts and community health worker systems.

Description: Nyaya Health has entered into an agreement with the Ministry of Health and Population, and with the Achham District Health Office (DHO) to embark upon a program to strengthen district health services. This collaboration seeks to develop and test models of improved health service delivery that can be appropriately scaled beyond the Achham context.

One aspect of this collaboration is to expand the capacity of the female community health volunteer (FCHV) system to not only provide its essential community level health promotional and referral support, but to also use the network to provide a critical function in monitoring the performance in health and sub health posts. FCHV’s are participating in a mobile communication based system that has greatly enhanced the capacity of the broader health system to rapidly identify new health needs as well as to follow up on the health outcomes and further support needs of patients having received care at health posts and hospital centers. This is seen as a critical, although often overlooked component of an integrated health system that accompanies patients beyond the boundaries of health posts and hospitals. These efforts have yielded a far more comprehensive health delivery system in which health needs are identified and acted upon prior to a hospital or health post visit, and in which patients are better tracked after leaving these facilities. The systems Nyaya Health is employing are data-driven, allowing us to develop and improve our services systematically.

Health posts are the most critical element in the government’s pledge to provide free and comprehensive essential care to its people. However, staff shortages, essential drug supply chain limitations and lack of equipment and facilities have limited its ability to fulfill that role. As a result, District and community hospitals as well as the private sector often provide the services that health posts were meant to fulfill. Nyaya Health is working with the DHO in a program in which we monitor the performance of health posts.

Recommendation: The capacities of health posts to fulfill their promise in addressing promotional health programs will depend upon organizational commitments to strengthen them. The current collaboration between Nyaya Health and the Achham DHO can become a model for such needed capacity building endeavors.

Lessons Learned: The potential for health promotion that exists within the FCHV network has yet to be fully developed. Current limitations in the ability to communicate information from communities to hospitals and health posts can be relieved through cost effective mobile technologies.
STRENGTHENING NEPAL’S FEMALE COMMUNITY HEALTH VOLUNTEER NETWORK THROUGH PUBLIC SECTOR ACCOMPANIMENT: EXPERIENCE AT TWO YEARS

Dan Schwarz¹,²,³, Ranju Sharma⁴, Chhitij Bashyal¹, Ryan Schwarz¹,²,³, Ashma Baruwal¹, Gregory Karelas¹,
Bibhusan Basnet¹, Nirajan Khadka¹, Jesse Brady¹,⁵, Zach Silver¹, Laura Corlin¹,⁶, Joia Mukherjee⁷,⁸,⁹, Jason Andrews¹,¹⁰, Duncan Smith-Rohrberg Maru¹,²,³

¹ Nyaya Health, Bayalpata Hospital; Ridikot, Achham, Nepal; ² Brigham and Women’s Hospital, Department of Medicine; Boston, MA, USA; ³ Children’s Hospital of Boston, Department of Medicine; Boston, MA, USA; ⁴ Medic Mobile; Kathmandu, Nepal / San Francisco, CA, USA; ⁵ Montana State University; Bozeman, MT, USA; ⁶ Tufts University School of Arts and Sciences; Medford, MA, USA; ⁷ Brigham and Women’s Hospital, Division of Global Health Equity; Boston, MA, USA; ⁸ Harvard Medical School, Department of Global Health and Social Medicine; Boston, MA, USA; ⁹ Partners In Health; Boston, MA, USA; ¹⁰ Massachusetts General Hospital, Division of Infectious Diseases; Boston, MA, USA

Email: bibhusan@nyayahealth.org

Issue: Community health workers play a critical role in global health systems. However, their impact is often limited by program implementation challenges. Empirical data in this area is lacking, and there remains no consensus about best practices for community health worker programs. Here, we describe a public sector accompaniment program to strengthen the Nepali government’s Female Community Health Volunteer (FCHV) network, implemented by the non-governmental organization Nyaya Health and the Nepali Ministry of Health and Population.

Description: The program was structured to 1) improve local FCHV leadership; 2) facilitate structured weekly FCHV meetings and 3) weekly FCHV trainings at the village level; 4) implement a monitoring and evaluation system for FCHV patient encounters; and 5) provide financial compensation for FCHV work. A formal 24-month program evaluation was conducted, including focus group discussions with FCHVs and the Community Health Worker Leaders (CHWLs). We have also analyzed the program in terms of operational designing, expansion and financial expenditures. In this article, we present the lessons learned from the first 24 months of program implementation.

Lessons Learned: Our experience suggests that the five core program components discussed here are integral for improving Nepal’s FCHV program. These lessons provide insights for both Nepal’s public sector health system and for other similar settings globally.

Recommendation: This program represents one model for national expansion of Nepal’s FCHV program. Piloting the program regionally within western Nepal in a large-scale effectiveness trial will maximize its impact and help drive effectiveness of the CHWs within the area they serve.
VIOLENCE IN HEALTH SECTOR IN NEPAL: A RETROSPECTIVE ANALYSIS OF FIVE YEARS DATA

Basnet BK
Nepal Medical Association, Kathmandu, Nepal
E-mail:

Introduction: Nepal Medical Association (NMA) is a professional organization of medical doctors in Nepal, which was established on the 4th March, 1951. The Association, with its clear vision and goals, is actively working for professional rights, medical ethics, advocacy and improvement of health services since its establishment. Nepalese doctors and health institutions have been facing unimaginable situations. The morale of the doctor and health institutions to cope with every complicated disease has been degraded because of the growing attacks due to patients. NMA is worried about the long term impact of such attacks on the health service professional. Incidences of damage of hospital's infrastructure, vehicles, misbehavior and physical assaults as well as kidnapping of health personals are increasing in Nepal. The Association has been drawing attention of the concerned authority to this regard to take action for the health professional's safety and create a congruent working environment in health institutions.

Methods: Data from Nepal Medical Association incidents registry was analyzed. As a professional organization it raises voice against any violence towards the health personnel and the institute. Sufferers contacted the NMA to raise awareness for their professional right and safety. Association takes action in the form of emergency executive meetings, press release, press conference, delegation to concerned authority of Nepal Government for professional safety. These incidents were recorded in our incident registry. Data from this registry in between January 2007 to January 2012 was analyzed for this study. Incidents were recorded in the form of infrastructure damage of hospital, physical assault to health personals, and misbehavior towards health personnel, damage to vehicles, kidnapping of health personnel and injuries endured. We, the authors, investigated these incidents as well those published in the national daily newspaper. The place of incident was investigated and it included the outpatient, inpatient and emergency department. The compensation given to health institutes as well as the patient's party and penalty was included.

Results: Total number of incidents recorded in Nepal medical association over 2007 January to 2012 January was 61. Among these incidents on health set-up, misbehave to health personals was highest 27 (44.26 %) followed by physical assault to health personals was 11 (18.03%). Similarly infrastructure damage of hospitals were seen third most common incidents which was 8 (13.12%). Likewise, damage to vehicles, kidnapping of health personnel and others incidents were recorded 3 (4.92%), 3 (4.92%) and 9 (14.75%) consecutively. These causes hamper professional function and deprived of services for needy and even the cases of compensation to patient's party causing economic burden to families, institutions and finally to country.

Conclusions: In this study, attacks on health professionals and facilities like misbehave; physical assault infrastructure damage was the most common findings. These incidence increases the deprivation of health workers and facilities for people. Nepal is passing through a very difficult phase of instability and uncertainty which hamper performing our duties. NMA follows international humanitarian law, human rights and medical ethics. So we are raising voice in favors to implement the health professional protection act.
INCREASING COMMUNITY INVOLVEMENT USING LOCAL SOLUTIONS TO IMPROVE MATERNAL AND NEWBORN HEALTH THROUGH HEALTH FACILITY MANAGEMENT COMMITTEES AT PERIPHERAL HEALTH FACILITIES IN ARGHAKHANCHI DISTRICT, NEPAL

Yam Bahadur Basnet, D.S. Manandhar, Chandra Rai, Mohan Paudel, Hari Rana, Jyoti Raj Shrestha, Dhruba Adhikari, Dinesh Ruwali

Background: As assessed in 11 health facilities, none of the Health Facility Management and Operation Committees (HFOMCs) in Arghakhanchi was found functioning as per the National Health Training Center (NHTC) approved Health Facility Management and Strengthening Program (HFMSP) guidelines. There was very limited female, Dalit and indigenous representation; the committees lacked management skills and they had very limited knowledge of the HFOMC’s role and responsibilities. Almost all health facilities were heavily dependent on existing health facility incomes and government budgets, and did not access or make use of other possible resources. The committee members had little awareness about maternal and newborn health problems. Not only was there very little uptake of responsibility to participate and support in health facility management, there was also little uptake (only 20.8% antenatal care by skilled attendants and 78.8 % home delivery) of the services from local community.

Strengthening HFOMCs was a nested intervention of operational research (OR) within the Partnership for Maternal and Newborn Health Program (PMNHP) implemented by Mother and Infant Research Activities (MIRA) in partnership with Health Right International with the support from the USAID Child Survival and Health Grant during 2011 and 2012 in five health facilities of Arghakhanchi district. It included a seven-day Training of Trainers (ToT); three day on-site training to committee members; and a one day debriefing/review workshop at the District Health Office (DHO). There was also an initial follow-up at eight months after training, including a refresher ToT, and a final follow-up six months after the first follow-up. The committees were facilitated through monthly meetings and the regular program review during the intervention period.

Results: On average, the aggregate score in HFOMC’s performance increased from 35% at baseline to 86% during the final follow up, with none of the targeted health facilities scoring less than 80%. Previously not having a single staff member who was recruited locally, after the intervention, four out of five targeted health facilities managed to recruit 16 additional health workers. Across the five intervention HFOMCs, Village Development Committees (VDCs) increased total MNC resources by an average of 110% from the baseline. All the 5 intervention health facilities now provide 24-hour delivery services (compared to only two 24-hour delivery sites before the intervention) including long acting family planning services. Health facilities have initiated some innovative solutions like providing incentives to FCHVs for health facility delivery referral, purchasing clothes for newborns delivering at health facility; initiating maternity waiting home and mobilizing the resource to revitalize primary health care out-reach clinics (PHC-ORC). Health facilities managed to increase the antenatal care (ANC) visits from 18% to 40% over the previous year, increase uptake of delivery and postnatal services compared to baseline.

Lessons learned: Functioning of HFOMCs ensure better functioning of health facility management thus improving and revitalizing maternal and newborn care services with local solutions and mobilizing locally available resources

Recommendation: Relevant authorities should give greater attention to the functioning of HFOMCs to ensure increasing and meaningful community involvement in improved health facility management and service delivery.

Keywords: community involvement, maternal and newborn health, health facility management, peripheral health facilities, Nepal and Health Facility Management and Operation Committees.
INEQUITIES IN UTILIZATION OF SKILLED BIRTH ATTENDANTS AND ANTENATAL CARE IN RURAL AND URBAN NEPAL, 1996-2011: IMPLICATIONS TO HEALTH PROMOTION

Amrit Bhandary¹, Padam Simkhada¹, Shophika Regmi¹
¹MPH Graduate, University of Sheffield
Email: bhandary.amrit@gmail.com

Background: Overall use of maternal health care is improving in Nepal. However, a wide gap remains in the use of such services according to socioeconomic and cultural contours. Monitoring socioeconomic inequities in the use of maternal health services is important to target scarce resources to those with in greater need, thus has implications for maternal health promotion policies and programs. This study attempts to investigate trends and extent of inequities in utilization of skilled birth attendants (SBA) and four or more antenatal care (≥4 ANC) visits in rural and urban Nepal disaggregated by wealth.

Methods: Datasets from four rounds of Nepal Demographic and Health Survey (1996, 2001, 2006 and 2011) were used to analyse trends and patterns in utilization of SBA and ≥4 ANC visits disaggregated by wealth and place of residence. National wealth indices as provided with the datasets were re-ranked to generate urban and rural specific wealth quintiles. Using appropriate sampling weights concentration curves, rate differences, rate-ratios and concentration index were calculated to measure inequities.

Results: The findings suggest marked improvements in the use of SBA and ≥4 ANC in both rural and urban Nepal during 1996-2011. In urban Nepal, the ‘richest’ mothers were six times more likely to use SBA compared to the poorest mothers in 1996 whereas in 2011 the gap decreased to about 2 times. Concentration index also showed decreasing trends (0.279 in 1996 to 0.135 in 2011). Richest urban mothers used SBA 68% more than their poorest counterparts in 1996, which decreased to 51% in 2011. Similar trends were observed for ≥4 ANC. Richest rural mothers were 7.54 times more likely to use SBA than their poorest counterparts in 1996, which slightly increased to 7.94 times in 2011. Concentration index also increased during the study period. Richest rural mothers were delivered by SBA 16% more than poorest rural mothers in 1996 which increased to 58% in 2011. In 1996, richest rural mothers were eight times more likely to use ≥4 ANC and they used 18% more than their poorest counterparts whereas they were three times more likely and used 52% more than their poorest counterparts in 2011.

Conclusion: Nationally representative datasets from four rounds of Nepal Demographic and Health Survey were used in this study. The study shows that the use of SBA and ≥4 ANC remains disproportionally lower among the poor mothers in Nepal, irrespective of the place of residence. After more than 15 years of the Safe Motherhood Program as a national priority, poor rural mothers almost do not use SBA during delivery. Until such a large segment of population has adequate access to essential maternal health services, it is difficult to realise National Safe Motherhood targets. Maternal health promotion policies and programs should focus not only on risk factor and behavioural interventions but also tackle social determinants of health through multi-sectoral approaches and focus to reach the population that need them most.

Keywords: Antenatal care, Skilled Birth Attendants, Inequity and Nepal

INTEGRATING MENTAL HEALTH SERVICE INTO PRIMARY HEALTH CARE SYSTEM

Netra Prasad Bhatta¹
United Mission to Nepal
E-mail: netraprasad.bhatta@umn.org.np

Descriptions: It is estimated that 14% of the global burden of disease are related to mental, neurological or substance abuse disorders and as stated there is "No health without mental health". In low and middle income countries only 2% of their total health budget is spent on mental health; out of which 80% is towards mental hospitals that serves only 7% of the patients.

A recent prevalence study conducted by United Mission to Nepal (UMN) in five districts found that the prevalence of common mental disorders is high. Other studies have shown that the approximate prevalence rate of mental disorders in Nepal exceeds more than 20% of the population. About 16% of women of reproductive age deaths are
due to suicide, the highest single cause, and there is an urgent need to improve understanding of the circumstances and contributory factors for these tragic events. About 14% school going age children suffer from emotional and behavioral problems in Nepal.

Mental health, however, is the most marginalized and neglected issue in Nepal and there is very limited research conducted in this field. As per the World Health Organization (WHO) definition, health is a “state of complete physical, mental and social wellbeing not merely the absence of disease or infirmity”. A person is healthy when he/she is mentally healthy too. Yet, mental health is somehow neglected in Nepal and most of the people do not take the issue seriously.

The situation is getting worse because the public have a misconception that mental illness is not treatable and manageable. Because of extreme forms of humiliation, marginalization, stigma and discrimination, mental illness reaches to its extreme stage. Then members of the family and also the society treat persons with mental illness very badly, almost like ‘animals or sub-human’. The persons do not even receive any medication. They are then either abandoned into a dark room or chained or forced to move to the streets. The persons with mental health conditions are deprived of their economic rights and hence cannot earn their own living.

There is a great potentiality to successfully managed mental disorders by providing most basic treatment. Working in mental health promotes respect of human rights and minimizes stigma and discrimination. Providing mental health services through primary health care level is affordable and cost effective as it can be integrated into the existing service delivery. Mental health is an important field to address in development work, as emphasized by WHO and its definition of health. There is a huge lack of resources in this field, especially in the areas of research, statistics and advocacy as well as there are very limited educated and trained personnel in Nepal. More than that, the people trained in this field have migrated to abroad to seek the better opportunities.

Lesson Learned:
1. Mainstreaming of mental health services at Primary Health Care (PHC) level is an effective approach in providing mental health care to the rural and disadvantaged people.
2. Mental health needs multi-sectorial initiatives from many community development programs.
3. Awareness raising activities plays a crucial role for reducing public stigma and discrimination.
4. Collaborative advocacy of likeminded organization as National Mental Health Network-Nepal is effective to raise awareness about the issues and create the synergy in the achievements.

Recommendations:
• Finalization and endorsement of Mental Health legislation by the government
• Scaling up of mental health services at PHC level and streamlining it through the Health Management Information System.
• Conducting more research on mental health focusing on prevalence and prevailing of stigma and discrimination.
• Implement evidence based mental health program in Nepal

Keywords: mental health, Nepal, awareness, stigma and discrimination.
Results: Analysis of data reveals that 13% of the sample schools still do not have drinking water supply of any kind in the compound. The number of schools having insufficient water supply is higher in Doti than in Dolakha and Sunsari. About 90% schools had toilets, but some toilets were not functional. The student-toilet ratio, on average, ranges from 56:1 in primary schools of Sunsari to 132:1 in secondary schools of Dolakha. About 75% of the schools have some kind of hand washing facility (tap, spring and hand pump) for students. However, wash stands are very rare. For waste management, 53.3% schools have managed a dustbin in classrooms, 64.4% schools have waste collection pits and 28.9% have incinerator pits. Only 8.8% of the schools have child and gender friendly water supply and sanitation facilities. Urinals in most schools are poor in terms of space, design, maintenance and cleanliness. Most schools have poorly maintained toilets due to lack of water supply within the toilets/urinals and regular cleaning practices. About 80% of them are aware of hand washing with soap and water before eating meals and after using toilets, but most of them rarely wash their hands properly after using toilets in schools because of the absence of washing facilities with soap. Health and hygiene education is taught simply through verbal explanation without practical activities. Child clubs in most schools are not routinely engaged in cleanliness activities.

Conclusion: Existing water supply and sanitation facilities are not properly managed and maintained, and hygiene promotion and practice are poor and inadequate to promote students' health. Efforts should be made to establish, utilize and maintain such facilities. It is essential to implement practical health education and hygiene promotion activities by integrating health, sanitation and hygiene issues across the curricula at different levels through participatory and skill-based pedagogy.

DRINKING WATER AND SANITATION PROGRAMME FOR REDUCING HEALTH HAZARD AND NUTRITION MANAGEMENT: AN EXPERIENCE ON COMMUNITY DEVELOPMENT ACTIVITIES OF DHADING

Eak Raj Chhatkuli1, Hem Raj Chhatkuli1, Chet Nath Itani1, Rajaram Sitaula1, Dhruba Raj Gyawali1, Kapil Devkota1
1FOCUS-Nepal Dhading
E-mail: focusnepal@ntc.net.np

Background: Over one billion people lack access to safe drinking water worldwide. Polluted water isn’t just dirty-it’s deadly. Some 1.8 million people die every year of diarrheal diseases like cholera. Tens of millions of others are seriously sickened by a host of water-related ailments-many of which are easily preventable.

In the context of Nepal 47.78 percent people have tap/piped water supply system while in hill area 72.03 percent have such facility. 38.17 percent of the total households do not have toilet facility (census- 2011). Each person requires at least 20 to 50 liters of clean safe water a day for drinking cooking and personal hygiene. Safe drinking water in hill area of rural Nepal has many challenges like sources availability, sustainability and better utilization of water maintaining the hygienic environment.

Issues: There is high scarcity of drinking water and sanitation facilitation in rural hill area in Nepal particularly in the dry middle hill area where source of water is minimal. In our observation, Dalits, and marginal groups are in trouble due to lack of water source and technology for multiple purpose of water. Community migration has been occurring for the drinking water and sanitation facility. People who are poor and have not opportunity to migrate are in vulnerable situation in terms of safe drinking water and hygienic life. Even in the area where limited water source are available community people have not using the water in optimum level due to lack awareness and understanding level. People living are such situation their daily life is in critical due to deficiency of fresh vegetable, nutrient food and hygienic environment.

Interventions: To address the water related issues in the rural hill FOCUS-Nepal has been implementing the drinking water and sanitation programme in partnership with different donors and partners. Both gravity and pumping system water supply schemes has been implementing as per the situation of the field. We have applied the participatory planning and implementation approach collecting cash and kind contribution from the community side. We have provisioned the condition for compulsory HHs toilet and community toilets, facilitated to manage water tap in each HHs of the community and schools, constructed the waste water pond to use the water in kitchen gardening and fresh vegetable production that has been contributing their food nutrition. Technologies have been transferred to the community for high value and off season fresh vegetable production. Awareness creation in school students and community groups for proper utilization of water has been doing.
Outcomes: During the last 8 years we have implemented 43 water supply schemes both in gravity and pumping system constructing 65 intake, 68 RVT and 1140 tap stands. During the implementation process people found highly interested to capture the resources under their single ownership and they feel happy to invest in their own water tap stand. In each scheme operation and maintenance (O&M) mechanism has developed with fund, scheme maintenance workers (SMW) and management committee of water users. Community initiated water seal toilet construction and individual cleanliness automatically after the project. After the project completion each HHs developed their kitchen garden and produced fresh vegetable for home consumption and sale.

Lesson learnt
- when water resources are available, community is more likely to utilize it in different manner
- when the development initiatives provide the appropriate technology, limited resources can generate the optimum benefits to the community
- single ownership with individual investment on the structure found more safety and sustainable rather than community responsibility
- Tap stand should be add connected and provision for the waste water utilization in the kitchen gardening and high value and off season vegetable farming
- We should not compromise to mobilize the skill manpower for the construction work for the sustainability of the project

Recommendations:
- Participatory planning and implementation approach should adopt for the project
- Community awareness and education is essential for maximum utilization of water
- Women and children should be entry point for the awareness raising process that can influence HHs and entire community
- O&M mechanism should be compulsory for the sustainability of the project
- Encouragement to construct the individual water tap stand rather than community water tap stand
- Meter system in each tap is the effective way to save the water and generate the O&M fund.

SEX PREFERENCES AMONG MOTHERS DELIVERING AT PATAN HOSPITAL

U D Chhetri, I Ansari, S Bhandary, N Adhikari

Background: High Sex Ratios at Birth (SRB) are seen in China, Taiwan, South Korea, parts of India and Vietnam. The imbalance that results is due to male child preference, accentuated by declining fertility. Prenatal sex determination and female feticides are common in many countries and is reflected in sex ratio

Objective: To determine the reasons for preference of gender; whether there is altered sex ratio at birth and to elucidate whether female feticide is common among women who had an abortion.

Method: It is a prospective questionnaire based study of women with a previous history of abortion, that had delivered at Patan Hospital in the Nepali year 2066 (2009/2010).

Results: Among 560 women and total live-births of 965, 462 male and 503 female, during their lifetime the overall sex ratio was 92 male per 100 female births and the total abortions were 663. Preferences for males was 10%, for females was 15.4% and 74% for either gender. The reasons for male child preference was to continue family lineage, to bring honor, old age security, and performing funeral rites; while the preferences for daughter were that they understand the mother’s pain and help in household work. The sex ratio of the babies born during the study period was 113 male per 100 female births. The sex ratio at birth from the 1st to 6th deliveries was 61, 79, 101, 210, 286 and 1100 male per 100 female birth, respectively. Prenatal sex selection was 8% by ultrasound but none interviewed had a sex-selected abortion.

Conclusion: Sex ratio of those delivered during the study period was skewed (136 boys per 100 girls) towards male. There was shift in SRB in 4th and subsequent pregnancies in favor of boys. As the male sex ratio increased the number of induced abortion decreased in subsequent pregnancies.

Keywords: Sex Ratios, prenatal sex-selection, female feticide, gender, abortion, Nepal, fertility.
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USING FORMATIVE RESEARCH TO IDENTIFY AREAS FOR HEALTH PROMOTION

Kirk Dearden, Pooja Pandey, Pranab Rajbhandari, Caroline Jacoby
E-mail:

Background: Suaahara project is unique in its approach which entails integrating nutrition, hygiene, agriculture, family planning, reproductive health and child health in order to improve nutrition. It is prioritizing changes in behaviours through community mobilization, interpersonal communication and media. Working closely with the government on this three-pronged approach helps the government achieve the objectives it established in its Multi-Sectoral Nutrition Plan.

Objectives: The project will focus on improving health and nutrition behaviours at the HH-level through promotion of the essential nutrition actions (ENA), particularly infant and young child feeding (IYCF), and addressing other determinants of under-nutrition, such as the availability of and access to food, quality of health care and child spacing and through essential hygiene actions that includes hand-washing, safe drinking water, safe disposal of faeces and proper storage and handling of food to prevent contamination as well as community or family construction and use of affordable latrines.

Methods: Focus group discussions, in-depth interviews, perceptual mapping and participant observations were used by the formative research team to collect information on the range of program areas.

Results: According to results from formative research, families encounter barriers to practicing healthy behaviours such as the following:
- Many mothers feel they don’t have enough breast milk.
- A mother’s workload means she doesn’t have time to eat healthy foods and wash hands.
- Families see quantity of food as more important than the diversity of foods that should be given.
- Foods that can be purchased are considered better than what is home grown.
- Parents worry that children can’t chew and swallow meat.
- Stunting is not viewed as bad.

Conclusions: To achieve impact, Suaahara will focus on 5 key practices in year 2 then expand the number of practices in years 3-5. These include: 1) washing hands before feeding the child 2) feeding as much or more foods when the child is sick as is normally fed 3) giving extra meals to pregnant and breastfeeding women 4) keeping children out of the dirt through construction of floor mats and other barriers, and 5) giving children eggs, meat and green leafy vegetables at 6 months of age.

Some of the reasons families do not practice these behaviours are because 1) behaviours are too complicated (small, do-able actions are needed) 2) barriers families face when practicing new behaviours are not discussed and resolved, and 3) outreach workers do not commit people to action.

Suaahara’s strategies to address these challenges include use of interpersonal counseling known as GALIDRAA, barrier cards, radio and community mobilization events.

Key Words: Essential nutrition actions, Infant and young child feeding, barriers to behavior change.

INTERACTIVE NUTRITION SESSIONS IMPROVE INFANT AND YOUNG CHILD FEEDING PRACTICES IN KAILALI DISTRICT WITH IMPROVED NUTRITION STATUS AMONG CHILDREN UNDER 2YEARS

Dale Devis
1Helen Keller International Nepal
E-mail: ddavis@hki.org

Background: From 2008-2012, the Action Against Malnutrition through Agriculture Project, supported homestead food production, essential nutrition actions and behavior change communication to increase availability and intake of nutrient-dense foods in a district-based model that can be adapted and taken to scale.

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Households were supported to establish improved home gardens and poultry rearing systems and guided through regular interactive sessions on infant and young child feeding practices, using simple doable actions.

**Objectives:** The objectives of the study were: a) To increase the accessibility and availability of micronutrient-rich foods year round for consumption by children under two years and pregnant and lactating women; b) to improve the nutritional and health status of children under 2 years and their mothers in target districts.

**Methods:** A multi-stage, cluster, randomized controlled trial was used to determine the impact of the activities on nutrition in Kailali district. The Probability Proportionate to Size (PPS) method was used to randomly select households with children 6-23 months. The same VDCs and Wards were included at baseline and endline and similar methods were used to select the children and mothers/caretakers from the sampled households.

**Results:** Children in AAMA intervention villages in Kailali district showed significant improvements in IYCF outcomes compared to the control area in minimum recommended meal frequency (19.51 percentage points; \( p<0.0001 \)), minimum recommended dietary diversity (23.53 percentage points; \( p<0.0001 \)) and receiving the minimum acceptable diet in terms of both meal frequency and food group diversity (29.65 percentage points; \( p<0.0001 \)). Data showed that in the past 24 hours, they had received vitamin-A rich food both from plant sources (20.31 percentage points, \( p<0.0001 \)) and animal sources (12.37 percentage points, \( p=0.010 \)) more frequently compared to children in the control areas. Results were similar for iron-rich foods, with children in the program areas consuming plant source foods (24.95 percentage points, \( p<0.0001 \)) and animal foods (21.43 percentage points, \( p<0.0001 \)) more frequently in the past 24 hours than children in the control areas. Children's dietary intake significantly improved compared to the control. Minimum acceptable diet based on meal frequency and food group diversity was higher by 29.6 percentage points (\( p<0.0001 \)). Stunting showed significant improvement with a reported 10.25 percentage points difference (\( P< 0.008 \)).

**Conclusions:** In the program intervention areas in Kailali there was significant improvement in project indicators at endline compared to baseline, and most of the indicators achieved the project target; an indication that the health and nutrition promotion methods were appropriate. Building on the success of AAMA, this approach has been adapted to Suuahara program and needs to address household food security and nutrition along with integrated efforts on safe motherhood, healthy timing and spacing of pregnancy and personal hygiene practices.

**Key words:** Nutrition, Infant and Young Child Feeding

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**CO-HEALTH EDUCATION TEACHER IN HIGHER SECONDARY SCHOOL IN GORKHA: (A PROFESSIONAL DILEMMA)**

Govinda Prasad Devkota.  
1Singhania University, India  
Email: devkotagovinda@hotmail.com

**Background:** There is growing consensus among Health Education Teachers to promote the professional development of health education students of higher secondary schools. Due to the complex and dynamic nature of health education and the unique development issues of the higher secondary school aged child, school health education teachers should have the professional skills and participate in ongoing professional development. Complex information and skills are required to educate today’s higher secondary school students about current health problems and emerging health trends. To ensure that these teachers have met requirements that validate their content knowledge and teaching and assessment skills, only national certified health education specialists should be employed.

All teachers responsible for the delivery of health education to students need to possess the knowledge, professionalism, and skills to effectively prepare students to make healthy choices throughout life. This development needs to occur during the professional preparation of individuals as they seek their teaching credentials. To assess the teaching learning process adopted by health education teacher and identify professionalism throughout their professional career are the objectives of the study.

**Methods:** An exploratory descriptive study was conducted by quantitative and qualitative methods. To provide comprehensive coverage, 48 higher secondary schools were selected by using purposive sampling (using HPE subject as a specializing). Out of total student’s who specialized Health education (918), 480 students and 48 HPE teacher’s were taken as sample by using simple random and purposive convenience sampling methods respectively. The tools for data collection were structured questionnaire (for students), interview schedule (for teachers) and
record review. EPI Data software version 2 (for Data Entry) and statistical software in social science (SPSS™) was used for quantitative data analysis whereas content, thematic and framework analysis were done for qualitative information.

**Results:** The pass percentage of 2066 (2010) was 75 and 82 from grade 11 and 12, respectively. No students reported that the teachers used teaching materials daily. The majority of the respondent (54%) informed that there excessively lectured in the classroom. With regard to games and sports, only 14% schools had appropriate playground and game equipment. The masters in Health Education is the basic requirements to teach health education in higher secondary level but 40 percent of the teachers were from a different background.

The qualitative data yielded that none of the teachers demonstrated dependability to carry out responsibilities. There was less practice to differentiate appropriate interpersonal interaction with respect to culture, ethnic origin, gender and sexual orientation. The research found that they demonstrated differing values and abilities among peers, and no confidence was found in action and communication. The health education teachers really enjoyed the same work environment as other professions but they are paid considerably less than the mainstream professions.

**Conclusion:** This study has identified key themes in relation to professionalism from a sample of higher secondary level students majoring health education and teachers of the same level and the subjects. The participants perceived ‘professionalism’ both as holistic concepts, and as a set of specific appropriate behaviours. Professionalism is not perceived as an absolute, but constructed in the interaction of individual and context. Identification of ‘unprofessional’ behavior in school/college may thereby to be subject to the same judgments. Beyond basic minimum standards, which may be set by regulations and codes of conduct, identification of these behaviours cannot therefore be assumed to be clear cut. It is suggested that health education professionals may be better regarded as a meta-skills of situational awareness and contextual judgment, allowing individuals to draw on a range of communication, technical and practical skills, and apply the appropriate skills for a given professional scenario.

**Keywords:** professionalism, higher secondary, students, health education, teachers, exploratory descriptive study, quantitative and qualitative methods.

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**EXPANSION OF FAMILY PLANNING SERVICES INTEGRATING WITH MATERNAL AND NEWBORN HEALTH IN ARGHAKHACHI, RURAL NEPAL**

**Leela Gautam**, Hari Rana, Chandra Rai, Mohan Paudel

**Background:** There have been many missed opportunities for family planning (FP) services, especially in the area of maternal and newborn health (MNH). There was limited mobilization of and networking with stakeholders in FP service utilization at the district level and a lack of information and education components. In 2010, out of 42 existing health facilities, only 1 health facility was found providing comprehensive Family Planning (FP) services during 2010.

**Descriptions:** The Family Planning project was nested within the partnership for maternal and newborn health (PMNH) project; and it was designed to reach women and their partners who came to health facilities to seek antenatal, natal and postnatal care; and family planning services. The project was funded by World Link through USAID over fourteen months from June 2011 to August 2012 in the Arghakhanchi district. The Family Health Division (FHD) at the Central Level and at the Arghakhanchi District Health Office (DHO) at district level were key collaborating partners; while local NGOs were implementing partners with the specific task of producing and airing FP messages through the local FM radio, as well as putting on street dramas in 21 different remote areas of the district. The project focused on the accessibility of FP services, including postpartum family planning in partnership with the District Health Office by building capacity of community health workers and supporting FP mobile clinics in various places within the districts that included 3 months of training.

**Results:** The project supported the initiation of long acting FP services at 17 health facilities; as opposed to only one health facility that offered these services at the baseline. The defaulters among oral and injectable contraceptives users decreased from 61% at baseline to 35% by the end of the project. In less than a year of implementation, all the 17 clinics started functioning. Furthermore, a total of 476 married women of reproductive age (265 from mobile camps and 211 from regular clinics) received contraception (200 Intra-Uterine Contraceptive Device or IUCD, 11 Post Partum- IUCD or PPIUCD and, 265 Implant), a substantial increase from the baseline. In a very short period of time, the project extended its network by inclusion of multi-stakeholders and their facilitators; this helped to provide one-to-one and group counseling/education to over 6000 people at different places of the district. The project
produced of an easy to use, friendly and portable ‘acrylic FP counseling kits’ and these were distributed in addition to FP posters to the health facilities.

**Lessons Learned:** Integrating family planning in MNH needs further efforts; training followed by on-site capacity building through mobile clinics could ensure the use of training skills. Utilizing Skilled Birth Attendants in FP service after initial PPIUCD training was convenient and accessible to meet demands of women in FP services, immediately after delivery.

**Recommendation:** Government and concerned organizations should utilize SBAs, ensure fully fledged FP choices and integrate a FP component within Maternal and Newborn health.

**Keywords:** Contraception, Skilled Birth Attendants, family planning, maternal and newborn health, rural and Nepal.

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**FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS AMONG POSTPARTUM MOTHERS ATTENDING PAROPAKAR MATERNITY AND WOMEN'S HOSPITAL, KATHMANDU NEPAL**

**Rajendra Kumar Giri**

1Society of Local Integrated Development Nepal  
E-mail: girl_rajendra@hotmail.com

**Background:** Postpartum Depression (PPD) is becoming a major public health issue since it has a double impact i.e. effect on mother and child health. PPD negatively affects women’s health, the care of children, especially child bonding, and the relationship among family members. The purpose of this study was to find out the prevalence and identify the factors associated with depressive symptoms among postpartum mothers attending Paropakar Maternity Hospital Kathmandu.

**Methods:** This study was a hospital based cross sectional, descriptive design with a mix of quantitative and qualitative methodologies. In quantitative methodology, systematic random sampling with 346 mothers who were 6-8 weeks of post delivery were interviewed by using semi-structured questionnaire using the Nepalese version of EPDS tool. Reliability coefficient (Cronbach’s alpha) of the scales were calculated, and found to be high (above 0.80). A cut off value of ≥10 was used for the Nepalese version of EPDS. In qualitative methodology, in-depth interview was conducted with five mothers who had a EPDS score ≥16 to supplement and validate the factors associated with depressive symptoms perceived by mothers. Median EPDS score among postpartum mothers was 5.5.

**Results:** Prevalence of postpartum depressive symptoms in this study sample was 30.2% (n=346). No culture related variables were found to be associated with depressive symptoms. None of the socio-demographic factor was associated with depression except husband education. PPD symptoms were significantly associated with husband’s educational status (adjusted OR 4.849, CI: 1.030-4.849). Similarly problems during pregnancy (adjusted OR=0.434, CI: 0.196-0.964) and subjective feeling of tension (adjusted OR= 0.292, CI: 0.137-0.624) were shown to have a protective effect after adjustment. Qualitative findings showed that the mothers, who participated in IDI, had PPD symptoms and associated emotional distress. The expression of the symptoms was context based and perceived factors of mothers were tension, weakness and poor relationship in home.

**Conclusion:** As it is an initial research in the area of mental health in Nepal, It will be useful to future research and everyone intended to PPD. This study along with other studies in postpartum depressive symptoms provides evidence that health care providers need to care for psychological issues when providing health care. From a research perspective, the study emphasized the need to conduct further qualitative research to explore why women experienced PPD. The study also emphasized the need for a screening programme for the prevention and treatment of targeted mothers who have poor pregnancy outcome measures. Depression screening prevention and treatment should be targeted for those mothers who have poor pregnancy outcome measures.
HEALTH PROMOTION IN PREVENTION OF HIV/AIDS - PAST EXPERIENCED AND ALTERATIVE APPROACH

Surendra Giri
1Butwal Multiple Campus Tribhuvan University, Rupandehi Lumbini Zone
Email: Surendra.giri2010@gmail.com

Review of the existing literature shows that government/NGO intervention programmes, survey and studies report mainly focused the risk groups’ sexual Health and risky sexual behaviours, information, health education and communication and behavior modification of risk groups which ignoring HIV/AIDS cases’ dynamic of family life and larger socio-economic structure. These larger social factors acted upon the family dynamics through changing access and availability of health services, understanding of HIV/AIDS cases’ health and ill-health and own perception and actions. Thus, socio-economic, ecological, behavioral, and political and health care providers and health service issues fostering the spread of HIV among populations were neglected in the conceptualization and implementation of the diseases control programme. Although AIDS is identified as primarily a disease of poor and concentrated developing countries and there is an understanding that poverty and developmental schemes lead in myriad ways to exposure of specific groups to occupations like migrant workers and prostitution, interventions simply Involve a search for medico-technical solution and behavior modification of individuals or risk. Health promotion action aims at making these conditions favorable through advocacy for health/ill-health of population. The main objective of this study is to review the approach on HIV/AIDS prevention programme in Nepal. The design of the study was retrospective in nature. Review was made of published and unpublished documents during the period 1990 to 2012.

This paper will also analyze the programme strategies accepting the linkage of AIDS programme with health service system within cross-cutting strategy and Issues. AIDS programme run conceptually, structurally and functionally in a vertical way and is referred to reductionist-approach. NCASC has been faithfully following the well known reductionist-approach. It also reveals that there is no evidence which defines the size and distribution of the “risk group”, to speak of a deeper analysis of the socio-economic forces and Political forces which made them risky in the first place. There is no epidemiological investigation to study the interface between the risk groups and non-risk groups in order to chart the process and spread of the disease within community. The surveillance and blood testing activities are incomplete, both epidemiologically and technically. The AIDS service delivery is limited to NGO areas and urban hospitals and they mainly focus on antiretroviral therapy (ART) services as well as preventive, supportive and community based care. Historically, research paradigms of HIV/AIDS are risk factor epidemiology/reductionist approach, social epidemiology, a psychosocial approach and eco-social approach. Beyond these mentioned approaches, is an emerging stream of studies that move beyond “eco-social epidemiological approach health promotion in the prevention of HIV/AIDS by taking the alternative approach; integrating thinking social dynamics and processes as well as people’s perception and behaviour into the epidemiological framework of health promotion in HIV/Aids prevention. Thus, the alternative solution of the problem deals with comprehensive public health approach /system approach.

In this study, it presents existing evidence linking socio-economic-political and cultural determinants of HIV/AIDS. In addition, it discuss the implications of these findings for future socio-economic-political and cultural epidemiological research on HIV/AIDS as well as the design of more effective HIV/AIDS prevention and health promotion.

NATIONAL SITUATION ANALYSIS ON HUMAN RESOURCE FOR HEALTH IN NEPAL, 2011-2012

Jagdishwor Ghimire1, Rajendra Gupta1, Raj Kumar Mahato1, Arjun Kumal1, Niranjan Thapa1, Asmita Hada1, Deepak Kumar Bishwakarma1
1Save the Children
E-mail: jagdishwor.ghimire@savethechildren.org

Background: An efficient and effective health-care delivery system largely depends on the availability of adequate number of committed and motivated health workforce, with the required competencies. However, the workforce crisis is the greatest health system constraint in the developing world, including Nepal. The work force crisis is not just about the volume of health service providers, but also about their distribution, deployment, mobilization, and retention. Nepal is far behind (0.29) the WHO benchmark of 2.3 doctors, nurses and midwives for each 1,000 people to deliver the essential health care services. Besides, the migration of qualified health care workers to high income countries exacerbates the problems as in other developing countries.
The production of health service providers may not be a big problem in Nepal, but ineffective planning, recruitment and management of HRH including rampant absenteeism and inappropriate skill mix of the deployed HRH deepen the problem further. As envisioned in Nepal Health Sector Programme II, the MoHP together with EDPs have directed their efforts towards increasing the staffing levels and improved training capacity of training institutions as well as providing enabling environment for improved work performance.

The purpose of this situation analysis of HRH was to put forward the existing situation of HRH in the country, review the existing policies and plans that govern HRH, identify the weakness and gaps in terms of production, quality and quantity, utilization and governance.

Methods: The situation analysis is a review of national HRH issues. It includes the desk review of the relevant literatures, collection of the data from the concerned organizations, professional councils/bodies and universities through consultative meetings with individual and groups. The collected information were tabulated and analysed as per the need and the objectives.

Results: Though nearly 100,000 health professional were registered with different councils, this review revealed that 27,316 health workers were serving in the public sector which was approximately 40% of total civil servants. A total of 39 category and sub categories of personnel were there as sanctioned positions for health service delivery. Despite the increase in number, it should be noted that staffing in the heath sector (5%) has not kept pace with the population growth (34%) in the last two decades. Still, there were vacant positions for the key positions like anesthesiologists, radiologists, medical officers, staff nurses and other paramedics.

In production side, there are 19 medical colleges and many institutes producing medical professionals, many paramedical institutions are producing nurses, 14 higher level pharmacy education institutions, 24Diploma in Pharmacy institutes. Council for Technical Education and Vocational Training (CTEV) produces nurses, and other paramedics and indigenous health professionals. In 2009, the CTEVT of the MoE and its affiliated campuses trained approximately 1,000 ANMs annually. The for-profit sector has also expanded over the years and produces 84% per cent of medical doctors (MBBS) in Nepal, and a similar share of staff nurses and other paramedics. Nearly 2000 MBBS doctors were produced from those 19 medical colleges each year. Although it is hard to say the real number of specialist serving within the nation, the number of registered specialists in medical council was 2,382 as compared to 130 currently working in the public sector, only 26% of which were female specialists. Similarly, there were 227 institutes for running different level of nursing programs and the majorities were affiliated with CTEVT, with the intake of 8,199 students in 2011/12. Though 37,897 nursing professionals were registered at nursing council, nearly one fifth (21.03%) of the nursing staff only renewed their registration. A total of 84 percent health professionals of 42,509 which are registered at NHPC were under the category of TSLC, whereas 11 percent under the PCL and only five percent as bachelor’s and above. There were a total of 8 institutions for Ayurveda education of different levels. This review revealed that there were 2,258 professionals in registered in Ayurveda Council. This reflected that there was sufficient stock of health workers being produced. But one of the reasons cited for the current shortages was the way in which health workers were deployed and distributed. The skill related, financial and motivational factors, and the working environment were some of the important factors identified during this review for underutilization of HRH. The regional distribution of health workforce (both permanent and temporary) indicated that the health workers per 1,000 populations were highest for the western region (1.27) and the lowest for the eastern region (1.17).

The review of national policies and plan indicated that there were certain legal and policy provisions for HRH in place. All the policy documents after 1991 raised the issues of HRH. The first national level master plan on HRH (1993 and 1995) guided by the national policy of 1991 mainly structured the current staffing pattern including FCHVs and TBAs. The strategic plan for HRH 2003-2017 mainly focused on direction of development of HR, but remains a weak policy document. The recent HRH strategic plan 2011-2015 identified the gaps in supply and distribution of health workers, performance level in the public sector and ineffective planning, management and development across the health sector.

Conclusions: The availability of health services and HRH is not adequate in relation to the growing population. Although certain steps has been taken to address the problems of HRH, there is a weak co-ordination of HR among practitioners, producers and users (academia, MoE, MoHP, professional councils, MoGA, PSC, etc); poorly functional mechanisms to coordinate and interface HR information for the health sector in general. The low level of retention and utilization of government health workers at all levels and lack of deployment and retention strategy has resulted in urban concentration and shortage of selected categories of health workers. The mal-distribution and poor HRH management is a major concern. There is inadequate quality control mechanism of HR producing institutions. There is a need for a clear policy indicating promotion, transfer and training policies and its timely implementation. The management of HRH is centralized which creates a barrier to effective service delivery.
DOMESTIC PRACTICE TOWARDS ZERO WASTE FOR ENVIRONMENTAL SUSTAINABILITY

Anoj Gurung
email: gurung.xibalba.anoj@gmail.com

Background: Awful sights and invasive smells while passing byroads and riversides are not new experiences for people living in cities like Pokhara and Kathmandu, as scattered waste far and wide demand zero waste. The concept which eliminates the discharge of waste in land, water and air that threatens planetary, human, animal or plant health, through the notion of reduce, reuse and recycle, is zero waste.

Methods: This quantitative research was based on an analytical cross-sectional study design intended to see the practice of zero waste in ward number eight of Pokhara Sub-metropolitan city, which is the largest amongst all the wards. It was hypothesized that people with higher levels of education would have good practice of waste management. The entire questionnaire was divided into four sections viz. reduce, reuse, recycle and management. Among 3,864 households, 350 houses were selected through the simple random sampling method. Pre-tested semi-structured questionnaires were used to collect the data with the ethical consideration. The collected data were tabulated and edited in Epi-data v.3.1 and were analyzed in SPSS v.17. The total practice level was categorized as good, fair and poor practice.

Results: The research showed that the biodegradable and non-degradable waste produced were almost equal in proportion; where biodegradable waste includes kitchen waste, and non-biodegradable waste comprises plastics, paper, dust, wood and iron. Management of both types of wastes was found imperfect. This means that the act of burning, burying and dumping waste into the river was found (33.5%), dismissing the principle of zero waste. All the demographic variables were tested against the overall zero waste practice to find out if any kind of relationship exists between them. For this, chi-square was conducted and it was make known that there existed a relationship between education level and zero waste practice (p-value=0.03). Furthermore, spearman's correlation was tested to determine the relationship, its strength and direction between the sections and interestingly, it came to light that reduction and recycle practices had a weak relationship and were in opposing directions. This means that when the concept ‘reduce’ is practiced, it can cause less recycling practice which seems coherent with the actual practice.

Conclusion: To conclude, the practice of zero waste in the selected area was poor (50.6%) and as it is the urban and most densely populated area, the same scenario can be assumed for other wards, and cities like Kathmandu. The production of the waste in our cities is the same as in developed countries. However the dumping of waste into rivers and roadsides has become the major problem in developing countries like ours. What we lack is the promotion of the notion of zero waste. To upsurge the recent condition of zero waste practice, it is recommended to those all in ruler level, private institutions, the community and the individual level to make policies, uphold them, and conduct health promoting actions like training and awareness programs regarding proper waste management.

KOSHELI BHET: A HEALTH PROMOTION APPROACH OF A RURAL COMMUNITY OF OKHALDHUNGA, RAMECHHAP AND DOLAKHA DISTRICTS

Dambar Singh Gurung1, Anil Chaudhary1
1Rural Health Development Project (RHDP)
Email: rhdppm@wlink.com.np

Issues: Kosheli is a very familiar term in Nepalese society. Literally “Kosheli” means to present or gift. After receiving training on Safe Motherhood mainly on BPP’s contents from RHDP, first of all this concept was initiated by the Health Mothers Group (MG) of Khijichandeshwori VDC of Okhaldhunga district in the beginning of 2007. Project found this concept very innovative and useful for health promotion mainly in increasing ANC visit, institutional delivery and PNC visits. Thus, RHDP facilitated MGs and MG Networks to expand this concept also in other VDCs of Okhaldhunga and eventually to Ramechhap and Dolakha.

The women who have completed the routine 4th antenatal (ANC) check up and delivered at health institution the community people including members of MG, MG Network, Female Community Health Volunteers (FCHVs) and local health workers visit home of the newly delivered women with gifts in their hand. The gifts include nutritious foods such as egg, ghee, chicken, green vegetables, rice, lentils, new clothes, and some present money as well.
People see the face of newborn baby only after presenting gifts. During this occasion all the people congratulate the newly delivered mother, her baby and her family members. Aside from this, the local health worker or FCHV provides health education to the mother and her husband.

**Descriptions:** RHDP is a bilateral project of the Government of Nepal and the Swiss Agency for Development and Cooperation (SDC). The project began in Dolakha district in 1990 as the Primary Health Care, Mothers and Child Health and Family Planning Project, becoming the Rural Health Development Project in 1997. RHDP expanded its services to Ramechhap in 1996 and to Okhaldhunga in 2006. Phase VI ended in July 2009. RHDP has now entered Phase VII, and will continue in Dolakha until 2011 and until 2013 in Ramechhap and Okhaldhunga. RHDP Phase VII aims to improve the overall health status of rural people of Dolakha, Ramechhap and Okhaldhunga districts by strengthening the linkages between demands and supply through positively changing health seeking behavior of community people especially women and capacitating local health service providers to respond to priority health needs. RHDP used participatory approaches to work in the rural villages through Health Mother’s Group, Mother’s Group Networks, FCHVs and Health Facility Management and Operation Committees (HFOMC) and Health Facilities (HFs) as local implementing partners.

Now the KosheliBhet is well recognized by local community, District Health Office, DDC and Village Development Committees as a very good approach of Health Promotion in Safe Motherhood. This initiative has contributed to increase the ANC visits, institutional delivery and postnatal (PNC) visit. The RHDP’s regular outcome monitoring data shows that the trend ANC, health workers delivery and PNC have remarkably increased in the project area and ANC 4th is 50%, 73%, and 73%, health workers delivery is 50%, 63%, 69% and PNC visit is 49%, 70% and 72%, respectively in 2009-10, 2010-11, and 2011-12. Such initiative has also increased the community participation and involvement of local bodies in health programs. MG, MG Networks and HFOMCs are able to tap the local resources from VDCs and capacitated to continue safe motherhood related community activities on their own. So the KosheliBhet initiative has contributed in reducing maternal and child morbidity and mortality in both districts.

**Lessons learned:** Lessons learnt of RHDP suggest that local community participation is very crucial to bring ownership and positive change in health promotion. Active involvement of MG, MG Networks, FCHVs and HFOMC as health promoters in the community has been essence for such progress. Their role has been pivotal in health promotion (increase in ANC, PNC and institutional delivery) and tapping local resources from VDCs. Active presence of RHDP during each community programs, in VDC and DDC council, formation and reformation of MG, MG Networks and HFOMCs helped to build good relationship with all level stakeholders, local bodies and political parties.

**Recommendations:** KosheliBhet is a very low-cost and effective intervention in public health for health promotion, which is very useful approach to increase ANC, PNC and institutional delivery. In addition it strengthens also equality, mutual relationships and social integrity in the village. Therefore such innovative and useful intervention can be replicated also in other districts across the country.

**Keywords:** Maternal and child, morbidity, mortality, antenatal, institutional delivery, postnatal, public health, health promotion, Nepal and community.

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**ONE HEALTH APPROACH TO PUBLIC HEALTH PROMOTION BY CONTROLLING INFECTIOUS, EMERGING AND RE-EMERGING ZOONOTIC DISEASES**

D. D. Joshi¹,
¹NZFHRC & OHAN
E-mail: joshi.durgadatt@yahoo.com

One health approach is to build understanding and applied use of the critical linkages among environment, wildlife, livestock and people breaking down the discipline “silos” that inhibit collaboration. Due to population growth creates two demands are more food and two less impact on environmental determinants of health. 870 million people are chronically undernourished. Livestock provides 40% of agriculture Gross Domestic Product (GDP) and is growing but causes pressing environmental problems, including new diseases: 65% of the 30 new diseases have come from animals. Livestock are a way out of poverty but a source of emerging risks. Social cultural and economic of the farmers learning at a local level will be a greater agent of change to more quickly, effectively and sustainably produce safe on-farm practices for secure food supplies in low resource settings than bio-technological approaches. There has been tremendous investment in technology for animal disease control to protect human health. A developed world assumption is the best technology will be adopted. This doesn’t recognize the reality of
farming in low resource settings. Integration is at the heart of this approach. It is based on understanding conflicting social, business, environmental and animal demands on end-user (farmer) and integrating them into risk reduction planning to maximize the likelihood that effective change may occur on farms to protect human Nepal (OHAN). In Nepal one of the OHAN meeting has identified the benefits that One Health Alliance of Nepal could provide at a national level; supports for surveillance of diseases in various animal species; coordinated gap/needs assessment; capacity building/training in disease surveillance; resource mobilization (capital); advocacy and technical assistance for evidence informed policy making and one health legislation; collaborative research; disease modeling and technological capacity building; networking (multilateral information sharing); strategic communication, advocacy and community involvement; enhancement of ecology and wildlife expertise –esp. wildlife health/disease; science-based policy input; evidence – based knowledge – education programs; focused approach on emerging and zoonotic diseases-determine priority diseases.

Keywords: on farms to protect human Nepal (OFPHN), wildlife health/disease, education programs; emerging and zoonotic diseases.

APPLICATION OF THEORETICAL BEHAVIOR CHANGE MODELS TO WASH

Linda Kentro

1Environmental Health Team Leader, USAID/Nepal
email: lkentro@usaid.gov

Issues: A strong understanding and application of behavior change theories can greatly improve the efficacy of public health interventions. This presentation will introduce the Social and Behavioral Change Communication (SBCC) model and demonstrate how this approach improves upon earlier theoretical frameworks. This symposium will discuss the four SBCC change levels described in the model (individual, interpersonal, community and enabling environment) and explain how these various spheres contribute to the adoption of healthy behaviours. After a discussion on the theoretical underpinnings of the SBCC model, this presentation will feature experts from four USAID-funded projects and the National Hygiene and Sanitation Master Plan who will describe how they apply SBCC principles to achieve project aims and improve health outcomes.

Descriptions:

Individual behavior change - The Suaahara Integrated Nutrition Program started in 2011 and will continue through 2015 in 20 districts. These districts are characterized by low nutritional status for children under five years of age. Suaahara encourages individual participants to take small, feasible actions to change behavior and build individual and family self-efficacy that enables the achievement of better nutritional outcomes. The program team, including staff and local and government volunteers, use cards depicting key behavioral actions (in nutrition, hygiene, sanitation, and reproductive health) to generate discussion among individuals at their homes or in groups, about positive behaviours and barriers to enacting them. Program staff and volunteers are trained in a discussion style that encourages people to adopt preferred behaviours by improving their ability to identify and mitigate the impact of key barriers.

Inter-personal behavior change - The Saath-Saath Program (SSP) aims to reduce the transmission and impact of HIV/AIDS through interpersonal communication between key populations (female sex workers and their clients, migrants and their spouses, and people living with HIV) and community mobilisers, home-based care workers, and volunteer peer educators. SSP’s interpersonal communication methodology is focused on positive health behavior change and maintenance, as well as improving family planning among key populations. Through one-on-one outreach sessions and small group discussions, SSP staff work to improve the adoption of positive living and health-seeking behaviours. Some beneficiary groups such as migrants and their spouses are also reached through community theater and radio programs with listener groups. Through a partnership with 49 civil society organizations, SSP works to provide comprehensive HIV/AIDS services in 33 high-risk districts.

Community change - The National Hygiene and Sanitation Master Plan was finalized in 2011 and is based on two principles: that fecal matter bacteria is transmitted between people by flies, fingers, food and fields, and that a radical reduction in diarrheal diseases requires social awakening and behavior change at the community level. Improved sanitation starts with analyzing local sanitation conditions, internalizing the impact of open defecation on public health and neighborhood environment, generating a collective plan of action, and initiating construction of improved water and sanitation facilities. Community plans may include systems of reward, penalty, publicity, masonry training, and marketing of sanitation goods, and local support for community-designated ultra-poor households. Once all
households and institution shave latrines, the community celebrates the attainment of its open defecation free status and systematically develops plans for total sanitation, comprising hand washing at critical times, hygienic food and water handling, and the safe disposal of animal and domestic waste.

**Enabling environment: From Research to Policy** - The ChlorhexidineNavi Care Program is an example of the research-policy-program continuum to create a successful enabling environment. ChlorhexidineNavi Care addresses the application of chlorhexidine to the umbilical cord of newborns to prevent neonatal infection and reduce newborn deaths. This intervention was piloted under the Nepal Family Health Program II. After its efficacy was established and product preferences understood, this intervention was endorsed by the Child Health Division as a life-saving measure and included as one of several components in the policy and package of interventions that is now used by all entities to implement community-based newborn care in Nepal. This program provides product information, technical assistance and related behavior change communication strategies to government programs and implementing agencies alike.

**Enabling environment: Essential commodity availability** - The Sangini Didi Neighbourhood Program, implemented by the Nepal CRS Company, is a behavior change and demand-generation activity for women living in the interior terai of Nepal. It was designed to increase household availability of health products where the commercial distribution system does not have access, thus creating an enabling environment for better family health. Nepal CRS staffs orient and educate members of women groups on family planning and maternal child health and the women voluntarily share their newfound knowledge with neighbors. In addition, the women's groups purchase family planning (condoms) and health (oral rehydration salts, clean delivery kits) products from Nepal CRS for sale to community people, thus earning revenue for themselves and group. The program aims to create an environment where family planning becomes a household word and the use of related supplies becomes a well-accepted practice.

**Lessons learned:**
Behavior change strategies have evolved to be more comprehensive and effective. To promote change at the individual level, it is vital to know the obstacles that impede the sustained adoption of improved behaviours. To promote change in interpersonal interactions it is important to understand the power and gender dynamics of sub-populations and to find change strategies and role models that effectively address these considerations. When a behavior change is clearly good for every member of the community and positive outcomes depend on full community adoption, change agents should empower communities to design their own means towards the necessary end. The creation of enabling social, institutional, political, and market environments is often vital to program success. Sustainable behavior change can benefit from greater understanding of social movement theories and the concept of tipping points, which refers to the dynamics of social change where trends rapidly evolve into permanent changes.

**Recommendations:**
The Health Promotion Conference should create a forum for ongoing enhancement of health promotion skills that comprises government, academic and development partners. The health sector would also be aided by government entities taking on roles of reviewing and promoting new models of behavior change communication and establishing a resource bank. This effort may require technical assistance to further enhance communication skills and knowledge management, such as for documentation of implemented behavioral change communication theoretical models, and advice on appropriate use of tools. Further, we note that behavior change theories have evolved in outwardly expansive directions, from the smallest ring, being individual, to the largest ring, being enabling environment. We suggest that greater attention to the natural environment might be the next important focus, whether as part of the enabling environment or as its own ring. We forecast that demographic and climate changes will lead to greater unpredictability in the availability or status of natural resources. Degraded natural resources, with water as an example, would diminish food security, hygiene, and sanitation, thus creating challenges to public health.

**FAMILY PLANNING PROMOTION AND BEHAVIOR CHANGE THROUGH SOCIAL MARKETING APPROACH**

Nirajan Khadka¹, Bimala Bhattarai²
¹Nyaya Health Nepal, Achham,
E-mail: nirajan@nyayahealth.org

**ISSUES:** 1: Promotion of reproductive health by promoting family planning methods through social marketing approach enhances the access of women to affordable reproductive health products and quality services. 2: Social Marketing approach is a better approach to target the at risk needy population and promote good health practices through various communication strategies such as Inter Personal Communication (IPC), Behavior Change
Communication (BCC) etc. Social Marketing approach is Cost effective, provide ownership of service to the clients and can be institutionally sustainable.

DESCRIPTION:
Social Marketing is defined as marketing science with regard to health behavior, human reactions to messages and message delivery and the “marketing mix” or “four Ps” of marketing (place, price, product and promotion). Social Marketing approach plays a vital role mostly as a role of catalyst or enabling factor for making right decisions in choosing appropriate family planning methods. Creating demand generation for service use is the major objective which is achieved mainly through two interventions; one is utilization of local human resources at household level through various communication strategies and another is the service provision by the Private Health Facilities. Plans and strategies are developed using behavioral change theory. Selection of appropriate communication channels and materials are based on the expected behavior change and knowledge status of the target audience. Development of Information, Education and Communication (IEC) materials and pre testing of these materials are carried out typically by using qualitative methods and implement the various communication strategies IPC, BCC including Community Advocacy Meetings. Effectiveness of these communication strategies is assessed in terms of status of awareness level of the audience, reactions to messages, and behavioral outcomes such as improved quality of life and continuity of service and refining the materials for future communications. The last stage feedbacks into the first, to create a continuous loop of planning, implementation, and improvement.

LESSONS LEARNT:
1. Program activities are target based. So it has made program activities action oriented and measurable in terms of indicators such as an increase in Contraceptive Prevalence Rate (CPR), decrease in unmet need of Family Planning, decrease in number of unwanted pregnancies, decrease in Maternal Mortality Ratio and ultimately leading to improved quality of life.
2. This approach brings feelings of ownership and credibility among service users resulting sustainable health practices.
3. Utilization of Local Human resources for family planning promotion is effective for demand generation and meeting the needs of service users.
4. Cost effective way of promoting reproductive health.

RECOMMENDATIONS:
1. This approach should be applied to every health program to achieve measurable results and desired Behavior Change.
2. Utilization of Local Human resources for family planning promotion is cost effective. So, should focus on enhancing their competencies so that we can mobilize them in other sectors of health too.
3. Enrollment of Private Health Facilities help to increase their accountability to people and easy to assure the quality of services. So should encourage such Private Health Facilities for service delivery.

BETTER CORD CARE SAVES BABIES’ LIVES

Leela khanal1, Hari Krishna Bhattarai2
1JSI/CNCP
2Email: lkhanal@cnpc.org.np

Issues: Neonatal mortality rate in Nepal is 33 per 1,000 live births and has remained unchanged in the past two demographic health surveys (2006 and 2011). Almost two-thirds of all deliveries occur at home generally in unhygienic conditions which increases the risk of infections in neonates which is the leading cause of death among neonates. In neonates the umbilical cord stump is a prime site of bacterial colonization through hands, instruments, cloths, and leads to local infections of the umbilical cord, also known as omphalitis, can progress to systemic infections, or sepsis, and can lead to death. Despite the potential, and a qualitative recognition of the burden of cord infections in developing countries, very little is actually known about cord infection.

Chlorhexidine (CHX) is a broad-spectrum antiseptic that is safe and effective for reducing bacterial colonization on umbilical stump and the surrounding area of the new-born. Use of 7.1% w/v Chlorhexidine dilgulconate in the freshly cut cord stump is essential for Promoting healthy newborn care practices and to replace harmful traditional cord care practices and thus decreases neonatal infection and death. Nepal is the first country scaling up use of CHX at national level.

Descriptions: Chlorhexidine is a broad-spectrum antiseptic which is superior to many other choices for reducing cord pathogens to reduce bacterial colonization on the skin and umbilical stump. Pooled analysis of several randomised controlled trials carried out in Nepal, Pakistan and Bangladesh have shown that immediate cleansing of the umbilical cord with 7.1% w/v chlorhexidine dilgulconate (CHX) reduces neonatal mortality about 23% and
severe infections by 68%. Given the encouraging results from the RCTs, Nepal conducted a consultative meeting, carried out a non-inferiority trial of 4% Chlorhexidine gel formulation versus aqueous, as well as a community acceptability study, and held a regional meeting on CHX before the Ministry of Health and Population approved of national level scale up and integration of Chlorhexidine cord cleansing within existing maternal, newborn and child health packages. To make this program a success all levels of health service providers and Female Community Health Volunteers received orientation on Chlorhexidine including proper counselling, application procedure and recording and reporting. This presentation includes evidence of CHX use, implementation approach for its scale-up at national level both at facility and community levels and success of Nepal serving as a living university in the world.

Lessons learned: Use of Chlorhexidine helps reduce neonatal infection and death, thereby ensuring the survival right of newborns. For national level success, multiple efforts is required like continuous attention including strong monitoring system and the establishment of a follow-up system to ensure appropriate and timely logistics and technical support. This is a cost-effective and easily-scalable program which can be replicated in other countries that are facing similar challenges.

APPLICATION OF OTTAWA CHARTER TO STRENGTHENING HIV/AIDS PROGRAM IN NEPAL

Pratik Khanal1, Shiva Raj Mishra2
1 DACC Coordinator, Gulmi, 2 Naulo Ghumti Nepal, Tanahau
Email: khanal_pratik@yahoo.com

Issues: The responsibility for mitigating HIV/AIDS is a shared responsibility of all. DDC has allocated funds to the HIV/AIDS sector in many districts. But the mobilization has always been the main challenge. DACC at district level has not been functional in all districts. Biological and Behavioral Surveillance (IBBS) surveys among key populations at higher risk is a critical challenge. Its application in policy making and tracking the progress of HIV AIDS related services at district level is still ill practiced. Information on HIV/AIDS has been included in the school curriculum but inadequate training to teachers on how to help students learn life skills and be safe from teen age pregnancy and HIV has limited their capacity to deliver.

Descriptions: Health promotion goes beyond health care. As envisaged in the first international conference on health promotion held in Ottawa, concentrated epidemic scenario of HIV infection in Nepal urges reorientation health services to focus on community based action, allocation of these resources towards the promotion of safe sex behaviours. The national response to HIV/AIDS has significantly decreased the rate of occurring new HIV infections throughout Nepal, this is prominent during the last five years essentially owing to the targeted prevention interventions among key population groups. As of 2011, there were approximately 50,200 adults and children living with HIV in Nepal, with an estimated overall prevalence of 0.30 per cent among the adult (15–49 years) population.

Lesson learned: In 2002, National AIDS Council, National AIDS Coordination committee (NACC) and District AIDS Coordination Committee (DACC) was established for guiding effective response against HIV with emphasis on integration of HIV into the existing general health program. The health delivery system in Nepal is extensive with at least one health facility in each VDC and over 48000 female community health volunteers and health workers promoting condoms, carrying out behavioral change communication activities in communities targeting population at higher risk and general population. These health workers are regularly trained by NCASC and other supporting partners. Community based orientations to different groups like teachers, community leaders, population at higher risk are conducted by different governmental and non governmental agencies.

Recommendations: Access to services like HIV testing and counseling. STI should be expanded through integration with other reproductive and primary health care services. Greater focus on condom promotion, STI management, and partner treatment should be promoted. Peer education should be strengthened and communities particularly at higher risk should be engaged in planning, implementation and monitoring of activities. National HIV/AIDS strategic goal of halving the number of new infections by 50 per cent and reducing AIDS-related deaths by 25 per cent by 2015 is possible with increased coverage (availability, accessibility, affordability and usage) of proven prevention interventions among key populations at higher risk to HIV, and scaling up of antiretroviral therapy. This requires HIV/AIDS prevention programs reach school, home, and work and community settings.
DEVELOPING A BEHAVIOR CHANGE INTERVENTION FOR SMOKING CESSATION WITHIN PRIMARY CARE

Sudeepa Khanal¹, Sushil Chandra Baral¹, Helen Elsey
¹Health Research and Social Development Forum, ²University of Leeds, Academic Unit of Public Health)
E-mail: Sudeepa.khanal@herd.org.np

Background: Prevalence of tobacco use in Nepal is on the rise and is estimated to be 31.6% overall in 15 years and above; with 52% among men and 13% among women (NDHS, 2006) thereby calling for immediate attention. There is evidence of effectiveness and cost-effectiveness of number of psychological and pharmacological treatments for tobacco dependence (WHO 2001; WHO 2004), particularly, where advice is given by trained health professionals (Gorin & Heck 2004; Lancaster & Stead 2004; Mojica et al. 2004). Thus, the aim of this study is to test the feasibility and potentially cost-effectiveness in including a behavioural support intervention for smoking cessation for lung health patients within primary care in Nepal.

Methods: Setting, the study is conducted in 2 Primary Health Care Centres (PHCCs) in Rupandehi and in Kathmandu, where the PAL programme has been implemented.

Study design was qualitative and action research. The study was done is 3 phases:
Phase 1-Collecting evidence to guide the development of a behaviour change intervention. Qualitative interviews were conducted with the lung health patients and health workers in the respective PHCCs.
Phase 2- Designing of the intervention using behaviour change techniques based on the evidence review and exploratory study done in phase 1. This abstract presents the work done up to phase 2.
Phase 3- Implementation of the intervention and follow up at 3 and 6 months using a standard questionnaire and carbon monoxide (CO) monitoring to assess quit rates.

Analysis: Ritchie and Spencer’s ‘framework’ approach (in Brymanv & Burgess 1994) was used to analyse the qualitative data.

Results: Findings from the qualitative study showed that though most of the participants are willing to quit smoking, they have not succeeded this due to various factors. Common motivations to quit smoking include health consequences either feared or actual and financial reasons. Participants felt the need of support from health institutions in order to quit smoking; and follow up of the patients who are willing to quit. This study uses the Stages of Change Model (Prochaska, J., Redding, C. & Evans, K. (2002) and uses the processes described by Michie et al (2008) to develop a behavior change intervention and IEC materials to provide health workers with the knowledge and skills to deliver support and interventions from PHCCs to support behaviour change to quit smoking.

Conclusions: This abstract presents the first two phases of a study to design and test a behaviour change intervention to support lung health patients to quit tobacco use in Nepal. Use of a qualitative phase to understand tobacco use from the patient perspective and the issues facing PHCCs’ health workers, in combination with a review of the evidence and a thoughtful application of behaviour change theories and techniques have ensured the development of an appropriate and potentially very effective intervention. The action research phase will ensure that the process of the intervention fits within the normal working of PHCCs and will thus increase the likelihood of sustainability and ‘upscaling’. The final quantitative phase will provide insights into whether the intervention is effective in helping lung health patients to quit tobacco use.

Keywords: Behaviour change, smoking cessation, tobacco, primary health care, qualitative and action research.
A SYSTEMATIC REVIEW ON THE FACTORS AFFECTING UTILISATION OF SKILLED DELIVERY CARE SERVICES IN SOUTH ASIA

Priti Kharel1, A Cantrell2, A.J. Sutton2, S.P Wasti3
1MPH Graduate, University of Sheffield, 2Health Economics and Decision Science, ScHARR, University of Sheffield, 3School of Health and Related Research, University of Sheffield
E-mail: kharel.prinum@gmail.com

Background: Despite the increasing interest in reducing the maternal mortality globally, there has only been a slight improvement in maternal health from the South Asian region over the last few decades. Many factors have been affecting the utilisation of available maternal services to achieve the Millennium Development Goals. Identification of these factors that act as barriers and facilitators in utilisation of those services is necessary to ensure its optimum use. Hence, improved uptake to skilled delivery care for childbirth is a priority strategy to improve maternal health. The main aim of this study was to systematically review the literature of factors affecting the utilisation of skilled delivery care services in South Asian countries.

Methods: Study searches were conducted in eight databases from studies published between 1996 to July 2012. Further searches were carried out from the citation list and retrieved papers. Papers were selected and screened on the basis of eligibility criteria of the review.

Result: A total of 4934 papers were identified from the database search, out of which 22 studies met the inclusion criteria. Thirty factors affecting utilisation of skilled delivery care services were identified. These factors were grouped under seven broad categories of socio-demographic factors, affordability, accessibility, and availability of services, family support and position of women in family, women’s knowledge, attitude and belief. Among the factors, mother’s education was found to have a significant relation with the utilisation of skilled delivery care services among 18 studies. Other factors that were found to be detrimental in a women’s decision to seek skilled birth attendant services were the husband’s education, economic status, mother’s occupation, availability of services and access to mass media.

Conclusion: Mother’s education was found to be the most important factor influencing a woman’s decision to seek skilled delivery care services. Interventions to improve women’s education level and creating awareness regarding the importance of skilled delivery care services are needed. Many authors note that the range of factors including distance, transport difficulty, family support and financial difficulty also needs to be addressed. Policy makers should be aware of that and subsequently develop targeted interventions (financial supports, better access) to improve the uptake of skilled health delivery care in Asian countries.

REDUCING MATERNAL MORTALITY RATIO IN NEPAL: A COMPARATIVE DATA ANALYSIS OF NEPAL DEMOGRAPHIC HEALTH SURVEY, 2001 AND 2006

Gehendra Bahadur Maharaj1, Barr, J2.
1University of Wolverhampton, UK 2School of Health and Well-Being, University of Wolverhampton, UK
E-mail: g.b.m@wlv.ac.uk

Background: Maternal mortality is one of the biggest public health problems in developing countries, similarly in Nepal. The Maternal Mortality Ratio (MMR) of Nepal was highest in 1990, at 471 per 100,000, among the South Asian countries. It has continued to decline since 1996; and was281 per 100,000 live births in 2006; the MMR was halved in a decade, a remarkable decline for the country.

Methods: A comparative descriptive analysis was carried out based on the Nepal Demographic Health Survey of 2001 and 2006.
Result: The fertility rate was reduced by 3.1% in 2006; however, it was 4.1% in the year of 2001 and 7.64% in 1996. Similarly, the usage of modern family planning methods increased, it was 35% in 2001 and 44% in 2006. Furthermore, the literacy rate of women was 70% in 2001 and 79.4% in 2006. The increased rate of utilizing healthcare services by skilled health workers during pregnancy and delivery was 20% in 2001 and 44% in 2006. Yet, there were still 78.1% delivery that took place at home, however, a decrease from 90% in 2001.

Conclusion: Influencing factors of maternal mortality including education, family planning, home delivery and health services improved in 2006 compared to 2001, and as a result had an impact on the reduction of maternal mortality. In conclusion, the higher utilization of healthcare services, skilled health workers led to decreasing maternal death among high-risk categories which led to a decline of the maternal mortality ratio of Nepal.

KNOWLEDGE AND TREATMENT PRACTICE OF TB AMONG TB PATIENTS IN BIR HOSPITAL, KATHMANDU

Gehendra Bahadur Mahara¹, B Aryal²
¹University of Wolverhampton, United Kingdom, ²Central Department of Health Education, Tribhuvan University, Kathmandu, Nepal
E-mail: g.b.m@wlv.ac.uk

Introduction: Tuberculosis (TB) is a communicable disease and it is the leading public health problem in the world, particularly in the developing countries. The objective of this study is to identify the knowledge and treatment practice of TB among TB patients in Bir Hospital, Nepal.

Methodology: A descriptive analysis was carried out based on the primary data source of diagnosed cases of Tuberculosis in Bir Hospital.

Results: TB infection was commonly found in the economically active age group (15-45 years old). The incidence of TB was higher in males than in females. More than 50 percent respondents knew of TB and its transmission, yet considerably lower in illiterate as compared to literate respondents. According to their occupation, those on daily wages people were more infected, followed by agricultural workers and was least in, service and business occupations. With regard to knowledge of causative factors of TB, 19.51% stated that the cause of TB is bacteria, whereas 15.59% respondents believed that TB is the 'god's punishment'. Finally, the study found 41.28% respondents had accurate knowledge about treatment duration for TB (6months).

Conclusion: The research found that most of patients had good knowledge of TB and its symptom, but poor knowledge of the causative agent and preventive measure of TB. It is recommended that policy and programs for health education focuses on the disposal of sputum, and other body fluids and prevention of TB. A TB health awareness program should be disseminated through the media, which will reach the general population, with more emphasis placed on the patients, family members, and community and health service providers. This kind of awareness program will help to reduce transmission of disease and prevent resistance to TB drugs.

Keywords: Tuberculosis, DOTS, Mycobacterium tuberculosis, awareness, health education.
SANITATION AND PERSONAL HYGIENE AMONG RESIDENTIAL EMPLOYEES OF BRICK FACTORY

Merina Maharjan¹, Kshitij Karki¹
¹Asian College for Advance Studies
Email: me_meri15@yahoo.com

Background: In Nepal, annually, some 13,000 children under-five die of diarrhoeal disease due to poor hygiene and sanitation. Nepal continues to bear the loss of some 10 billion Rupees (U.S. $120 000) each year as a result. For instance in Nepal, a large number of residential employees of brick factories in Nepal, and their families, reside in poorly managed cottages and as a consequence there is high prevalence of infectious diseases due to poor sanitation and personal hygiene conditions; which leads to diarrhoeal disease in children under-five. The main objective of this study was to assess the knowledge and practice of sanitation and personal hygiene of residential employees of brick factories.

Methods: The research was carried out in two brick factories of Kathmandu valley, which were Imadole Village Development Committee, Lalitpur and Satungal, Village Development Committee of Kathmandu District. A cross-sectional descriptive study design was applied. All 131 households of the residential employees of the brick factory premises were taken. One person, of either gender, from each household aged above 15 years was sampled. Semi-structured questionnaires were used to interview the residential employees along with an observation checklist. Verbal and written consents were taken prior to data collection. The collected data was manually edited, cross-checked and analyzed with Statistical Package for Social Sciences (SPSS) version 16 for Windows. The research, however, could not be generalized in other industrial settings.

Results: Half of the respondents were from Janajati, and most of them were illiterate and primary-level educated. It was found that only 19% of respondents were purifying water. Nearly, one-third of respondents replied that they always clean the water sources to prevent diseases. Toilets were used by 42.5% of respondents, and the majority (80%) of the respondent were washing their hands after defecation. Good practice of waste disposal burning and burying was found among 16.2% and 22.5%, respectively. More than half (55%) of the respondents were disposing wastewater by throwing around their house. The mean number of times for brushing of teeth, per day, was 0.99 and bathing per week was 1.9. During last three months, nearly 50% of respondents suffered from diarrhoea. The knowledge regarding sanitation and personal hygiene were found to be slightly better among literate and radio owners. Yet, hygiene practices were slightly unsatisfactory among literates.

Conclusions: There is lacking of sanitation and information, and education and awareness are not applied in a sufficient manner. This may lead to poor health status, such as prone to communicable diseases (diarrhoeal diseases and tuberculosis) and an extra-economic burden. Adoption of hygiene practices, however, is a behavioural phenomenon and persistent engagement and promotion is necessary. This study, therefore, has provided the baseline information for further study and development of health promotion activities.

Keywords: Hygiene, sanitation, health promotion, cross-sectional, diarrheal disease, Nepal.

BREASTFEEDING KNOWLWDGE AND PRACTICE OF MOTHER HAVING CHILDREN UNDER TWO YEARS IN SUNKHANI VDC OF SINDHUPALCHOK DISTRICT

Tilak Mahatara¹
¹Nobel College, Kathmandu

Background: Despite the significant improvement in the child health interventions, neonatal and infant mortality still remains a challenge in achieving the Millennium Development Goal in Nepal. Breastfeeding practice was considered to be one of the most effective interventions to achieve MDG 4. However, childbirth and the neonatal period are culturally important times, during which there is strong adherence to traditional practices. Successful implementation of the intervention therefore requires in-depth knowledge of the local context.

This study was carried out in rural VDC, Sunkhani of Sindhupalchok. It uses quantitative data from a cross-sectional survey following mothers through their experience of pregnancy and the postnatal period. It explores breast feeding
practices and beliefs, analyses their harmful or beneficial characteristics and elucidates areas of potential resistance towards social behaviors change communication.

Regarding the knowledge, 52.1% mothers were aware about initiation time of breast feeding, 99.3% mothers had exclusive breast feeding knowledge and 71.5% of mothers were aware of complimentary feeding and 52.1% of mothers started breast feeding within one hour of the baby’s birth. In addition, exclusive breast feeding practice was found in 71% of cases, 68.8% of mothers practiced complementary foods properly and an association was found between the mothers’ level of education and her knowledge of breast feeding. Moreover, whilst a significant difference between the age and religion of the mother and practices of breast feeding were found, there were no significant differences between the knowledge and practice level of breast feeding by mothers.

Breastfeeding has found to be universally acceptable in the study area. This study demonstrates that a remarkably good knowledge exists in the study areas. However, of those who have knowledge, practice is poor. So, further efforts are needed to increase good breast feeding practices and the progress that has already been achieved is needed to be sustained and improved further.

**Key words:** Breastfeeding, knowledge, mother

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**ACHIEVEMENTS IN HEALTH PROMOTION ACTIVITIES IN NEPAL: SCENARIO POST OTTAWA CHARTER CONFERENCE**

Preeti Kumari Mahato

1Western Regional Health Directorate, Ramghat, Pokhara

Health promotion is the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on the individual’s behaviour towards a wide range of social and environmental interventions. The Ottawa Charter for Health Promotion is considered a landmark achievement in health promotion. It outlines six health promotion action areas which include to: build healthy public policy, create supportive environments, strengthen community actions, develop personal skills, reorient health services and move into future.

The health promotion activities in Nepal started first in the form of talk radio program. Currently National Health Education Information And Communication Center (NHEICC) is responsible for Information, Education And Communication (IEC) health promotion activities, which have:

(i) Achievements in creating supportive environment in Nepal that includes national school health and nutrition strategy endorsed by the Ministry of Health in 2006. (ii) Achievements in building health public policy including the Aama Surakshya program(antenatal and institutional delivery incentive program), basic emergency obstetric care and intricate emergency obstetric care, and Female Community Health Volunteers (FCHVs). Healthy policies in child health include the biannual Vitamin A supplementation program, mother and child care. Similarly, healthy policies in disease control include Directly Observed Treatment Short-course (DOTS), Multi Drug Therapy (MDT) for leprosy. (iii) Achievements in strengthening community actions include Community Management of Acute Malnutrition (CMAM), Community Based Integrated Management of Childhood Illness (CB-IMCI) and Behaviours Change Communication (BCC). (iv) Achievements in developing personal skills include trainings for FCHVs, basic and refresher training on malaria microscopy for laboratory technicians and assistants and other trainings. (v) Achievements in reorienting health services includes Primary Health Care Outreach Clinic (PHC/ORC) program, Nepal Nutrition Assessment and Gap Analysis (NAGA).

We are on track of achieving the Millennium Development Goals (MDGs), particularly in some indicators like maternal mortality rate but still other indicators like neonatal mortality rate, infant mortality rate needs to be decreased while indicators like contraceptive prevalence rate, and percentage of institutional delivery needs to be increased.

The current situation shows a lack of, or, poor surveillance of diseases, evaluation of health programs, government leadership and also government spending on health. The Ottawa Charter needs to be considered while planning for health promotion related activities, learning from success of other countries, recognizing and building on success and also by involving the community and general public.

**Keywords:** Ottawa Charter, health promotion, maternal health, malaria, leprosy & Millennium Development Goals.
REASONS BEHIND WOMEN HAVING ABORTION AND CONSEQUENCES OF ABORTION: A STUDY AMONG ABORTED WOMEN IN CHARIKOT, NEPAL.

Pritha Manandhar \(^1\) & J Thapa\(^1\)

\(^1\)Little Buddha College of Health Sciences, Minbhawan, Kathmandu
E-mail: pritha.manandhar91@gmail.com

**Background:** Abortion is the termination of pregnancy from whatever cause before the fetus is capable of extra uterine life (WHO, 1994). It was legalized in Nepal under the 11\(^{th}\) amendment to the Country Code (Muluki Ain) in March 2002. The main aims of the study were to assess the health related factors and socio-economic factors for an abortion and to elucidate the physical and social consequences of abortion. The study was conducted in Nepal’s Dolakha district for 8 months (May to December, 2011). Methods: Descriptive cross-sectional study and case study were done among the aborted women. The sample was selected using purposive sampling. Sample size was 51 for the cross-sectional study and 3 case studies were done from among the same sample. The data was collected using face-to-face interview technique using structured and semi-structured questionnaire. The data were analyzed using Statistical Package for Social Sciences (SPSS\(^{TM}\)). Regarding the reasons behind abortion, health-related factors included unintended pregnancy due to non-usage of contraceptive (60.8%) or failure of contraceptive (39.2%) and to ‘stop’ childbearing (47.1%). Age (7.8% below 18 years and 2.0% above 35 years), maternal health (3.9%) and health of fetus (3.9%) played a minor role. Very few had economic reasons for an abortion; 11.8% did not want to leave their job and 5.9% said it was due to food insecurity. Nearly one third (31.4%) said they aborted as they wanted son and 9.8% said they did so because of pregnancy before marriage. The general health condition of 29.4% of the respondents was degraded. Among them, the commonest physical consequences were lower abdominal pain (80.0%) and back pain (53.3%). Few had uterine perforation (26.7%) and Pelvic Inflammatory Disease, placenta previa and cervical laceration (6.7% each). The study showed that 56.9% of the respondents were ‘happy after abortion’. Few of them were involved in smoking and alcoholism9.8% and 5.9%, respectively due to abortion. 72.5% of the families of respondents were ‘happy’ and 96.1% said that their society was unaffected with their decision to abort. 84.3% said that abortion had brought positive affects in their daily work. It can be concluded that abortion had brought positive affects in daily life of most of the respondents and very few were having physical and social consequences after abortion. Yet the information on Family Planning methods and their proper use were lacking, which was the major cause of unintended pregnancy, resulting in abortion among the respondents. So, the health education campaign on Family Planning can be conducted among the couples with the help of government policy to provide accurate and adequate information on Family Planning and their importance. The results of the study can also be helpful to improve the Post Abortion Care (PAC) services to minimize physical, psychological and social suffering caused by abortion, thus promoting the health of women. This study is recommended for use an analytical document to instigate the development and launch health promotion programs related to abortion issues.

**Keywords:** Abortion, cross-sectional study, Nepal, family planning, Post Abortion Care (PAC) services, policy and gender.

PERINATAL VERBAL AUTOPSY AT ARGAKHANCHI DISTRICT HOSPITAL, NEPAL

Sunil Raj Manandhar\(^1\), Nibesh Budhathoki\(^2\), D Adhikari\(^1\), DS Manandhar\(^1\), JR Shrestha\(^1\), C Rai\(^3\), M Poudel\(^3\)

\(^1\)Mother and Infant Research Activities (MIRA), \(^2\)Argakhanchi District Hospital, \(^3\)Health Right International
E-mail: s.manandhar@mira.org.np

**Introduction:** Verbal Autopsy (VA) as a method can be used to ascertain causes of death in the perinatal period in the hospital and in the community without performing an actual autopsy that requires a pathologist, a rarity in rural areas. VA helps to come to a diagnosis of possible cause/s of death by analyzing factors associated with death through detailed questioning of the family and the health personnel concerned.

**Objectives of the study:** To analyze the causes of perinatal deaths and to identify the risk factors associated with perinatal deaths by VA.

**Methodology:** One day training on perinatal verbal autopsy in two groups was given at Argakhanchi district hospital on the 24th and 27th April 2011 of no. 2 electoral constituency of Argakhanchi district. Refresher training on perinatal VA was given on the 31st Dec and 1st Jan 2012 for the same health staff. A total of 135 health staff (Doctor, Nurse, Auxiliary Nurse Midwife, Health Assistant and Auxiliary Health Worker) was given orientation on the theoretical and
practical aspect of perinatal VA. The Nepal government approved verbal autopsy forms were used.

**Result:** A total 35 perinatal VA forms were filled. Out of which 21 were stillbirths and 14 were early neonatal deaths. In Argakhanchi district hospital, there were a total of 29 perinatal deaths. Out of which, 19 were stillbirths and 10 were early neonatal deaths. In this study, perinatal mortality rate (PMR) of Argakhanchi district hospital was 28 per 1000 births and Neonatal Mortality Rate (NMR) was 12 per 1000 live births. The commonest cause of stillbirth was obstetric complications (42%), whereas the commonest cause of early neonatal death was severe birth asphyxia (50%). According to Wigglesworth’s classification, the commonest cause of perinatal death was in group IV (44%) suggesting intrauterine asphyxial deaths.

**Discussion:** As stillbirths (46%) were macerated stillbirths, which indicate poor or suboptimal antenatal care in health facility. Among early neonatal deaths, 50% was severe birth asphyxia, indicating poor intrapartum fetal monitoring and delay in immediate intervention at health facilities.

**Conclusion:** This is a study that lasted a 19 months period only. Verbal autopsies are filled and analyzed. Dissemination of the findings of this study to the health sector would increase awareness of the preventable factors related to perinatal deaths. This study has highlighted the need for regular antenatal check-up and delivery in health facilities with proper monitoring and timely intervention.

**Keywords:** Verbal autopsy, neonatal, stillbirths, and neonatal mortality rate.

**ANALYSIS OF OBSTETRIC NEAR MISS CASES AT HEALTH FACILITIES OF ARGAKHANCHI DISTRICT, NEPAL**

Sunil Raj Manandhar¹, D Adhikari¹, DS Manandhar¹, JR Shrestha¹, C Rai², M Poudel²
¹Mother and infant research activities (MIRA), ²Health Right International (HRI)
E-mail: s.manandhar@mira.org.np

**Background:** Investigating severe maternal morbidity (near-miss) is a newly recognized tool that identifies women at high risk of maternal death and helps lower maternal deaths.

**Methodology:** Obstetric near-miss refers to a woman who nearly dies due to a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy but survives. Near-miss cases are based on disease-specific criteria and include: hemorrhage, hypertensive disorders in pregnancy, dystocia, infection and anemia. The objective here was to identify obstetric near miss cases in various health facilities of Argakhanchi district, Nepal. One day training on identifying obstetric near miss cases was given at Argakhanchi district hospital on 26th and 27th July 2012 in two groups of health staff of no. 2 electoral constituency of Argakhanchi district. 168 health staff (doctor, staff nurse, Health Assistant and Auxiliary Nurse Midwife) of different health facilities of the district were trained infilling WHO obstetric near miss case forms.

**Results:** A total of 10 patients of obstetric near miss cases were reported. Among them, 3 patients were each from Argakhanchi district hospital and Subarnakhal health post. Similarly, two patients were from Thada Primary Healthcare Centre and one patient from Pokharathok and Siddhara health post each. Among near miss cases, 9 had postpartum hemorrhage (PPH) and one had antepartum hemorrhage (APH). Among PPH, 7 cases were due to retained placenta, whereas one case was a first degree perineal tear and one case was due to an a tonic uterus.

**Discussion:** Hemorrhage was found to be a serious obstetric complication. Out of this, PPH was the most common. All patients received blood transfusion and appropriate management at the health facility for saving the life of patients. Those 10 women would have died had they not received appropriate care. Recording and discussion of such near miss cases would have increased awareness among health staff and lead to improved management of such cases.
Conclusion: This study highlights the common serious obstetric problem in the health facilities and indicates the need for provision of appropriate and timely intervention in the health facilities for preventing maternal deaths due to such complications.

Keywords: Hemorrhage, maternal morbidity, maternal health, obstetric near miss,

KNOWLEDGE TRANSFORMATION IN PUBLIC HEALTH: FUTURE PERSPECTIVES

SB Marahatta¹, N Aryal²
¹Associate/Member, Institute of Public Health Calgary University/ Manmohan Memorial Medical College; ²Manmohan Memorial Community Hospital
E-mail: sujanmarahatta@gmail.com

Background: All healthcare systems are faced with the challenges of improving quality of care and reducing the risk of adverse events. Globally, health systems fail to use evidence optimally. The result is inefficiency and a reduction in both quantity and quality of life. Providing evidence from clinical research is necessary but not enough for the provision of optimal care. The day to day breakthrough in the knowledge domain of health sciences needs to be applied to enrich the health and livelihood of people. Taking about the process of knowledge various entities such as knowledge sharing, knowledge creation, knowledge exchange and knowledge transfer exists. Knowledge translation is defined as “the synthesis, exchange, and application of knowledge by relevant stakeholders to accelerate the benefits of global and local innovation in strengthening health systems and improving people’s health”. The knowledge translation gap is, however, evident.

Description: Knowledge translation gap is the gap between knowledge developed in the context of research communities and the knowledge held by those in healthcare practice communities as evidenced by their practices. This is due to the lack of collaboration between researchers and the experts to share knowledge and inform practice. A number of models and theories have been developed to overcome the barrier of translating knowledge between research and practice.

Lessons Learned: The recent model is Evidence Based Medicine (EBM). EBM sought to maximize efficiency of medical practice by adopting a more rationally ordered means of predicting health outcomes and organizing of service provision ordered by means of predicting health outcomes and organizing service provision. This model of medical practice organizes ‘knowledge’ into levels of rational validity with double-blind randomized control trials as the most trustworthy type of explicit medical knowledge based on statistical inference.

Recommendation: This paper discusses the knowledge translation and exchange in healthcare, knowledge translation processes and future direction. There is no doubt that ensuring proper application of knowledge by addressing gaps between research and practice is the key means of achieving success in health care.

Keywords: Knowledge translation, healthcare, evidence based medicine, knowledge exchange and knowledge gap, informed practice.
Introduction: Non-Communicable Diseases (NCDs) e.g. cancer, heart diseases, diabetes mellitus and chronic respiratory diseases are increasing in many countries of the world including Nepal. With increase in burden of NCDs globally, Nepal is also experiencing double burden of diseases -communicable vs. non-communicable diseases. NCDs are no more considered the diseases of rich people and rich countries and it can affect the poor also equally if there is a risk factor.

Major NCDs have association with risk factors such as tobacco consumption, harmful use of alcohol, unhealthy life style and unhealthy food and air pollution. Health promotion can raise awareness in prevention of the NCDs and it is very effective and efficient way of addressing the issue of NCDs. With increase in the burden of NCDs, as non-health factors affecting health the issue of ‘health in all policies’ and ‘social determinants of health’ is getting more importance and that demands effective inter-sectoral collaboration.

Objective: Review the status of NCD risk factors and current strategies in relation to health promotion in Nepal

Methodology: Review of the national policies, strategies and studies related to NCDs in Nepal

Findings: According to the NCD Risk Factor Survey 2008, the prevalence of tobacco user is 35.4%, alcohol consumption 33.3%, population with good physically activity is 83%, and low intake of fruit and vegetables is 61.9%. Populations taking more than 5g salt intake per day per capita found approximately 80% (Hypertension in Nepal-1983) and houses using traditional cook stoves are 52% (Nepal Living Standard Survey 2011). Similarly, there are reports that the hypothyroidism and blood disorders have increased significantly and they are also linked with risk factors such as intake of some vegetables e.g. cabbage and consanguineous marriage respectively.

Health promotion activities: There are separate laws approved by parliament such as alcohol control act and tobacco control act and some actions are under implementation in recent years. Advertisement of tobacco and alcohol through electronic media has been banned since 1996. Physical activity has been promoted by non-state organizations through Yoga camps and Gyms or physical fitness centers and this is also regularly broadcasted by television. There is less effort for promotion of healthy food behaviour in Nepal. The access to junk foods has increased even in rural and remote areas in recent years increasing the risk of NCDs in the population. There is an unconfirmed report that the intake of salt also increased significantly with taking more salty foods and increase in number of items of foods with salt as well.

There are ongoing efforts to improve the indoor air pollution through the use of green energy such as bio-gas, micro-hydel, and solar power and government of Nepal is providing subsidy for rural areas. There is a plan to scale up the improved cook stoves in every household by 2017 from current 3% households only.

Nepal has introduced vaccines that prevent cancer such as Hepatitis B that can lead cancer of liver and HPV vaccine against the cervical cancer. The Hepatitis B has been introduced as a part of national immunization for all infants and HPV as a pilot study in high school students through civil society organizations. There is limited cervical cancer screening programme organized by some hospitals. In last two decades or so some specialized hospitals such as cancer and heart centers have been established and they can be good resource centers for health promotion activities of NCDS.

Current strategies
- Reduce demand and supply of tobacco-increase tax including health tax, ban to sale to children
- Reduce demand and supply of alcohol- increase tax including health tax, ban to sale to children, sale alcohol after afternoon only
- Health tax fund on tobacco and alcohol products
- Promotion of intake of more seasonal fruits and green vegetables
- Reduce intake of salt
- Promotion of healthy food behavior
- Promotion of Yoga, physical activity
- Enhance inter sectoral –collaboration
- Subsidy to ultra poor patients for treatment of some major NCDs

Conclusion
- Except physical activity, Nepalese populations are having more than one risk factors for getting NCD.
- Health promotion tool is very effective for prevention of NCDs and very efficient and sustainable and many countries have already reduced the burden of NCDs in their countries.
- Needs effective inter sectoral -coordination as many NCD risk factors are associated with non-health departments and their regulations and control?
- Health promotion of NCDs can assist in achieving health sector MDG specially MDG 4 and 5 as the effect of alcohol, tobacco and air pollution is directly related to fetal outcome and mother’s health.
In view of the double burden of disease in Nepal, it is urgent to search innovative financing model for financing health promotion of NCDs.

**Key words:** Non-communicable diseases, risk factors, health promotion, health sector, health behaviours, demand and supply

**FACTORS AFFECTING NEONATAL DEATH IN RAUTAHAT DISTRICT**

**Amit Mishra**

1Nobel College, Sinamangal

**Background:** Pregnancy and childbirth are generally times of joy for parents and families. The period requires special care for both mothers and newborns. Giving special attention and care should not be considered as a mercy to the women and the newborn by the family, community and nation, rather as a responsibility and respect to women’s rights. A baby who has not completed 28 days of his/her life is considered a newborn or neonate. The first 28 days of life is potential for infection to the newborn baby due to low immunity power, new circumstance of environment and totally depend upon other.

**Methodology:** Analytical, cross-sectional study design. Quantitative method was used, study site was V.D.C of the Rautahat District of Nepal. Study population was all married women (15-49 yrs age) who had a live birth within 12 months. Study sampling was Probability sampling method, using Clustered Sampling (probability proportionate at size)

**Sample size:**

For estimation, using following formula

\[ n = \frac{\sigma^2 \times p \times q}{\chi^2} \]

This gives total sample size of 96. It was considered 5% as a non response rate which gives final sample size i.e. approximately 101.

Duration of study: The study duration was from 27th July to November

Selection criteria: Inclusion criteria: Mother having live birth baby up to 12 months

Exclusion criteria: Mothers who do not have a live birth child within 12 months.

Data analysis and management: Data was managed in Ms-excel and datasheet SPSS 16.0 and analysis was done in SPSS in order to determine the relationship between independent and dependent variables, chi-square test was done to obtain odds ratio with 95% Confidence Interval. A p-value of less than 0.05 will be considered statistically significant.

**Result:** Median age of the Mothers was 20 years, Half of the mothers were illiterate, Time period of ANC visit was not maintained properly, Most of the deliveries (64%) were conducted at house. Most of the home deliveries (33%) were conducted by Untrained TBA. 15% of the neonates were born prior to their time. Neonatal death was mostly reported due to Preterm birth/low birth weight, Infection and other factors such as congenital deformity.

**Conclusion:** Statistical significance was found between Neonatal death and factors such as Pre-term birth/low birth weight, Infection and congenital deformity. Further in the future it will help to promote the health of the mother and children by minimizing the factors causing neonatal deaths.
SEXUAL BEHAVIOURS AMONG MEN WHO HAVE SEX WITH MEN: A QUANTITATIVE CROSS SECTIONAL STUDY IN KATHMANDU VALLEY, NEPAL

Shiva Raj Mishra¹, Vishnu Khanal²
¹Naulo Ghumti Nepal, Tanahun, Saath-Saath Project, ²PhD Candidate, Curtin University, Australia
Email: shivarajmishra@gmail.com

Background: Unprotected sexual transmission is the cause of approximately 70%–80% of human immunodeficiency virus (HIV) infections worldwide. Prevalence of HIV infection was more than tenfold higher (3.8%) among men who have sex with men (MSM) than in the general population (0.33%) in Nepal in 2011. This study aimed to explore sexual behaviours, and social and demographic characteristics of MSM in Kathmandu Valley, Nepal.

Methods: A quantitative cross sectional study was conducted among 113 MSM. MSM is a hidden population in Nepalese society, therefore, it was difficult to construct a sample frame for this research so respondent driven sampling was used which gives unbiased estimates of population parameters and has the potential to reach MSM, who are not easily accessible. A structured interview was used to obtain the information.

Results: The majority of respondents were above 20 years old (mean=27.9 years, SD=7.4 years). Forty three percent of respondents were receptive, identifying themselves as Meti. Forty six percent of respondents were married. The majority had sex with males which were predominantly anal. MSM had an average number of 43 sex partners (last three months). Nearly 95% had used a condom, and 92% had used lubricant during their last sex act. Thirty eight percent perceived themselves as at risk of HIV. The majority knew of a place for confidential HIV testing in Kathmandu.

Conclusions: This study highlights the importance of partner tracing during HIV counseling and testing, the importance of drop-in centers to increase access to condoms, and supports the need to increase comprehensive health services and peer led participatory behavioral change communication activities to this population in the national HIV response.

Keywords: men who have sex with men, sexual behavior, cross sectional, quantitative, Nepal

UTILIZATION OF MATERNITY DELIVERY SERVICES IN RURAL AREAS OF KATHMANDU DISTRICT

Neginhal (Gurung) V¹, TR Gurung¹
¹Dept of Public Health, Nobel College, Kathmandu

Introduction: Increasing the proportion of births attended by trained health providers is likely to be the key factor in reducing maternal and perinatal morbidity and mortality. In Nepal, the provision of skilled assistance is starting from a relatively low level since the vast majority of women deliver at home without trained attendants. Barriers to improving maternal health include limited availability and quality of health information and services; and gender and social norms, cultural acceptability, cost and distance which reduce utilization even when services exist.

Objectives: To identify the key factors influencing the utilization of delivery services and stakeholders’ perceptions about these services.

Materials and Methods: Qualitative study was done to collect the data regarding utilization of maternity delivery services by using the in-depth interview method among delivered mothers, mother-in law, father-in law and husbands. Focus group discussions were done among FCHV, mother groups. Analysis involved using a thematic coding system.
Results and Conclusion: Low levels of female education plays a key role in under-utilization of SBA services through lack of knowledge; socio cultural factors and awareness. Women’s poor social status and power of decision making leading to deprived opportunities. Strategies to improve education, financial/human resource problems and transport were then critically examined.

Key words: Delivery, SBA, Maternal Health, FCHV, Mother Group

SCHOOL HEALTH PROGRAM: KEY TO IMPROVE KNOWLEDGE AND PRACTICE ON PERSONAL HYGIENE AMONG SCHOOL CHILDREN

Mamata Sharma Neupane 1
1Chitwan Medical College and Teaching Hospital
E-mail:

Background: Proper hygiene should be maintained for prevention of diseases and promotion of health. Hygiene related practices are of considerable importance as it has a health impact in terms of increased vulnerability to many diseases. Due to inadequate knowledge about personal hygiene, school children are facing enormous problem in maintaining the hygiene. Personal hygiene is often neglected issue among school children. Personal hygiene and management is an issue that is insufficiently acknowledged and has not received adequate attention in the govt. schools.

Objectives: The objectives of the study were: i) to assess the level of knowledge and practices of personal hygiene among school children ii) to find out the effects of School health program to improve the knowledge and practice of personal hygiene.

Methods and methodology: Two schools were selected purposively, one school from Shibanagar (Western Chitwan) and another from Khairaheni (Western Chitwan). A descriptive study, using a pre-tested, semi-structured questionnaire developed by the research team was chosen and observation was carried out to assess the knowledge, and practice of personal hygiene among male and female of public secondary school students in Chitwan District. The study population consisted of male and female of 6-8 classes aged 10-15 years. The students were of different caste and religious backgrounds. These categories of students were chosen because they represent both lower secondary and secondary levels. A total of 190 students were selected randomly for the study. Pretesting of the tool was done in 30 students of other school and some changes were made in questionnaire in the light of pre –testing. Collected information was systematically compiled. Data entry and analysis was done in SPSS 17.0 version and data cleaning was also conducted. Ethical considerations were maintained throughout the study.

Results: Good knowledge on personal hygiene was found among 111(58.4%) students. However, regarding practice on personal hygiene, only 76 students (40%) washed their hands with soap and water before taking the food and after defecation. Only 18 (9.4%) students used to take bath 2 times in a week 61(35.8%) students reported that they brushed teeth regularly and 90 (47.3%) students had trimmed nails.

As an interventional approach, school health program was conducted in both schools in weekly basis for one month and knowledge and practice of the same students regarding personal hygiene was assessed after 3 months. The findings showed a remarkable improvement. Good knowledge on personal hygiene was found among 174 (91.6%) 134 (70.5%) students washed their hands with soap and water before taking the food and after defecation. One hundred and two (53.7%) students used to took bath at least two times in a week and 179 students (94.2%) students reported that they brushed teeth regularly and all students appeared with trimmed nails.

Conclusion: Good personal hygiene is mandatory to all. Small efforts of School authority and health care provider can bring the significant improvement in knowledge and practice of school children and they can work as the change agents in family and society. Therefore, school health program is pivotal for health promotion and disease prevention.
REFLECTIONS FROM OVERSEAS STUDENTS ON DIFFERENT ASPECTS OF HEALTH PROMOTION IN DHADING NEPAL

Oluwatosin Okuwobi¹, Adanze Uchegbulam¹, Chinenyе Fan-Osuala¹, Arleigh Delaney¹, Charlotte Simmons¹, Nandi Mkushi¹, Rebecca Thomas¹, Jennifer Crisp¹, Sonia Coates¹, Helen Jordan¹, Leneesha Marks¹.
¹University of Sheffield, UK

This presentation is based on the different health issues observed by postgraduate students of Sheffield University during the International Development field practice at Nalang VDC of Dhading, Nepal.

1. The first issue is related to elderly livelihood in Nalang VDC.
   The Aim of the field visit is to examine the welfare and wellbeing of the elderly (60+) in Nalang District, Nepal. Based on the literature there are 4 main themes that emerge with regards to elderly welfare. These include, perceptions of old age, access to healthcare, elderly livelihoods, and social protection. The main method used was semi-structured interviews in order to gain a deeper understanding of elderly people's lives. Firstly looking at human capital, health is an important consideration because disability has been identified as a main concern of the elderly. Secondly, this is in line with the livelihoods framework which analyses the capabilities, activities and assets that are a necessary part of living. Thirdly, another consideration is the access to healthcare that the elderly have. And finally the ability social protection has to assist in reduction of poverty in the elderly.

2. The second issue is related to water and sanitation.
   This project aims to explore the health issues related to water and sanitation in and around Nalang VDC. Based on the observation, water and sanitation situation has improved the last 5 years due to community lead programme and health worker's outreach activities. Many households still do not have adequate safe drinking water and the main sources are well and tapes. Many households do not take measures to purify it. Sanitation facilities have also been found to be inadequate. There is lack of knowledge on sanitation and hygiene.

3. The third issue is related to utilization of maternal health services and quality of care.
   This project seeks to explore the factors influencing maternal health care service utilisation and delivery. Drawing from observations, there has been an increase in the utilisation of these services as a result of the government incentives and increased awareness of the importance of maternal care in the community. However, there are issues relating to the availability of health personnel and emergency equipment which hinder the effective delivery of maternal health care services.

RAPID REVIEW OF HEALTH PROMOTION COMPONENTS OF PARAMEDICS' CURRICULUM

Sarita Panday¹, Padam Simkhada¹; Edwin van Teijlingen²
¹University of Sheffield UK; ²Bournemouth University UK
Email: s.panday@sheffield.ac.uk

Background: Despite the growing recognition of and the need for health promotion in health staff’s curricula there has been no review of the Nepalese curricula. This rapid review identifies the gaps in health promotion components within the paramedical curriculum.

Methods: A framework was prepared for the evaluation of health promotion components using WHO Ottawa Charter guidelines, European health promotion strategies and the general health promotion literature. A simple Content Analysis approach was used to record the presence or absence of each health promotion component in each curriculum.

Results: Curricula of General Medicine (Health Assistant), Auxiliary Nurse Midwife (ANM) and Community Medicine Assistant (CMA) were reviewed with the above framework. The second year of the Health Assistant curriculum involved a course on “foundation of health education and health promotion”. This course mainly explained the health
education process in detail, determinants of health and key factors of health education such as learning, motivation and change process. The health promotion content involved five hours of theory classes with description on scope, principles and Ottawa Charter. Both ANM and CMA curriculum do not include any formal health promotion. Likewise, the CMA course involved detailed content of health education and communication but, as with the health assistant course, doesn’t discuss active participation of community members in recognising their health need. The CMA course merely explains the role of CMA to prevent disease in the community or schools. The community health nursing part of the ANM curriculum has some health promotion content, however, the content reflects more on public health interventions than health promotion.

**Conclusion:** All three curricula (Health Assistant, CMA and ANM) lacked major components of health promotion. Despite the inclusion of the term health promotion in the subject heading of Health Assistant, health promotion is a peculiarly small sub-unit with less clear notion of how the course will deliver its different components. None of the curricula reviewed provides a comprehensive account of health promotion components such as community participation, capacity building, and approaches of health promotion interventions which were vital to health promotion. As health promotion is integral to improve the health of individuals and their communities, and is substantial for community empowerment, steps should be taken to revise and incorporate the health promotion component in paramedical curricula.

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**NEWBORN CARE PRACTICE AMONG MOTHERS OF RAUTAHAT DISTRICT, NEPAL**

Bhawana Panta¹

¹Nobel College, Sinamangal

**Background:** Newborn health care starts before the birth of the baby and continues till the baby is of 28 days. It starts with caring for pregnant mothers by addressing her needs; ensuring she is adequately nourished, applying infection prevention measures, and is monitored for complications. According to NDHS (2011) the majority of newborns (68%) did not receive a postnatal checkup within the first week after birth (11%), compared to 58% of newborns delivered in a health facility. Similarly, postnatal checkups were less likely among mothers aged 35 – 49 years in the Central Development region than among birth in other categories. According to available data, one in every 22 Nepalese child dies before reaching age 1 Year, while one in every 19 does not survive up to her or his 5th birthday. For limiting the neonatal mortality, a series of care for both the mother and child is essential, but little attention is being given towards it by the concerned authority.

**Methodology:** The study was conducted in Rautahat district. It was an analytical, cross-sectional study design. Quantitative method was used in the study; the study population was all married women (15-49 yrs age) who had had a live birth within 12 months. Study sampling was probability sampling method, using Clustered Sampling (Using probability proportionate at size). Total sample size was 101. Data analysis and management: Data was managed in Ms-excel and datasheet SPSS 16.0 and analysis was done in SPSS in order to determine the relationship between independent and dependent variables, chi-square test was done with 95% Confidence Interval. A p-value of less than 0.05 will be considered statistically significant.

**Result:** In the present study, the median age of the mothers was 18 years, almost half of the respondents were illiterate and 94% of the respondents went for ANC visit. There was no statistical significance association between education level of the mother and variables such as clean home delivery kit use during home delivery, Instrument used for cord cutting, bathing of baby after birth, Colestrum feeding, and PNC visit. Most of the babies delivered at home were kept on the floor immediately after birth. The study found that most of the respondents (7%) applied oil after cord cutting. A used blade was preferred for cord cutting. Half of the respondents didn’t know about kangaroo mother care practice.

**Conclusion:** New born care practice in Rautahat district didn’t seemed to be satisfactory due to early marriage, low maternal educational status and knowledge on new born care practice, low institutional deliveries, less deliveries being conducted by skilled health workers, lack of importance of colestrum feeding to the newborn babies, use of unsterilized blade for cord cutting and few PNC visits. It will help to promote the newborn health care practices among the mothers and reduce mother and child death.
STUDY ON SUSTAINABILITY OF HYGIENE BEHAVIOURS

Himalaya Panthi¹
¹Nepal Water for Health (NEWAH), Kathmandu, Nepal
E-mail: himalaya@newah.org.np

Background: Evidence has established that access to improved drinking water and sanitation is vital in reducing morbidity and mortality and improving the quality of life in people. The National Sanitation Master Plan, 2011 has duly recognized this fact and given considerable importance to the promotion of water and sanitation facilities and to bring sustainable hygiene behaviours. In order to retain the gains and outputs from investments made in the water supply and sanitation sector. Sustainability of hygiene behaviours is of utmost importance for any intervention in this sector. Retaining hygienic behaviours, once changed, and ensuing uninterrupted access to services has become the prime focus of an intervention on the water and sanitation sector.

NEWAH, appreciating the importance of sustainability of hygiene behaviours, built into the project promotion sustainable hygiene behaviours during the project intervention, and made provision of a periodic follow-up and monitoring of the hygienic behaviours in the intervention area over time. It has incorporated six core areas in its intervention: disease control, personal hygiene, household sanitation, environmental sanitation, treatment of diarrheal diseases and awareness on sanitation and other cross-cutting issues. The study on “Sustainability of Hygiene Behaviours in Surkhet and Doti Districts” was conducted in 2012 to examine a trend in promoting and retaining hygiene behaviours from baseline survey to the final evaluation and to the sustainability study.

In order to determine people’s hygiene behavior NEWAH envisaged to undertaking a baseline survey before the project and endline evaluation after the project end. After the project as routine observation suggests, most of the communities have adapted good hygiene behaviours. Most of the studies, however, show hygiene behaviours promoted during the project fade away after the project. It is, therefore, this study was designed to assess the level of sustainability of hygiene behaviours after one year of the completion: to investigate hygiene behaviours and whether exposure intervention was associated with desired behavior change.

Methodology: A case control study was conducted. Comparison group was selected from the same district with similar socio-economic status as of the intervention group. A total of 21 areas; 14 intervention clusters and 7 comparison group were selected for the study. In total 350 households from intervention clusters and 175 households from comparison clusters were chosen randomly. The methods used were: household survey and observation (n=475), interviews and focused group discussions. The study used pre-tested questionnaire.

Findings: Sanitation and hygiene behaviours were improved in intervention areas compared with the control area; use of toilet, hand washing with soap at critical times, food hygiene and water handling practices, keeping households, community and schools clean. The prevalence of sanitation-related diseases such as diarrhea has declined from the baseline to final evaluation survey and the sustainability evaluation; 29.3% final evaluation and 2.6% in sustainability study. This could be the result of improvement in hand washing behaviours. As for instance, 97% participants demonstrated correct hand washing skills. There was an increase in NEWAH previous years’ evaluation. Progress in some indicators was lower. It further demands aggressive measures for retaining hygiene behaviours in the future sanitation programs as is envisaged by the sanitation and hygiene plan.

Keywords: handwashing, hygiene, sanitation, Nepal, evaluation and water.
Background: Health, Hygiene and Sanitation are basic rights for children and essential elements of development and effective poverty reduction. Lack of proper hygiene and sanitation facilities, as well as risk hygiene behavior result in a huge burden of an avoidable hygiene-related disease for children in Nepal. Diseases such as diarrhoea, intestinal worms, respiratory infections and tooth decay are widespread and can result in school absenteeism, increased drop-out rates and impact on children’s physical and cognitive development as well as education attainment. The lack of adequate gender-segregated and private toilet and washing facilities in schools can also have an impact on school performance and attendance, particularly among girls.

This is the backdrop for Nepal Red Cross’s programmatic focus on water, sanitation and hygiene (WASH) and the WASH in Schools program (WinS) since schools are an ideal entry point to provide appropriate facilities and to establish good hygiene practices. NRCS supports WinS activities to help improve education outcomes for all children, and to reinforce, through schools, WASH-related initiatives in communities including the promotion of hand washing with soap, improved water safety practices and the elimination of open defecation through School Led Total Sanitation and related participatory approaches. In this approach school is the entry point and children are the change agent of the community.

During the past three years period NRCS implemented Hygiene and Sanitation project in more than 800 schools and its catchment area. Among of them an evaluation study carried out in 43 schools in four districts namely Dhading, Arghakhanchi, Rupandehi and Makawanpur implemented International friendship Project with the support of Japanese Red Cross Society. This study was carried out in January 2013 and completed February 2013. The objectives were: a) to evaluate the impact of the project and b) to evaluate the current hygiene and sanitation status of the students, their home and the nearby community.

Methods: Both qualitative and quantitative methods were applied to collect information. Similarly secondary and primary sources of information were also used in the study. Participatory methodology was applied as far as possible to involve students, teachers, Red Cross volunteers and community people.

The study covered JRC functioning all 43 schools. All 43 Schools of 4 districts, where the project was implemented, were visited by the project field staff to fill up sanitation observation forms and school record sheet. Out of 43 schools, 14 were selected purposively from the above mentioned 4 districts for FGD and KII.

Results: Changes in schools and among students were observed after intervention, the major changes were, all schools had toilet, clean compounds and classroom. Schools had first aid facility, and the overall sanitation and hygiene was maintained. There was a good relation between community and schools. Community people were aware about personal hygienic behavior and they come to school if they want to know regarding hygienic issues. Adoption of tippy tap is a new sanitation practice among school. This method increases the hand washing behavior and saves water. People from other schools also come to see it, teachers talk about it in the teachers meeting and even the district office have observed it and viewed that this should be implied in many other places. The group tooth brushing practice is also highly popular among the other schools/community people and DEO. The coverage of toilet construction has been considered the main change in community. To declare ODF in the school catchment area and VDC, lots of contribution had been made by individuals, students, teachers and school management committee.

There has been a decrease in the status of diarrhea among both adults and children. Due to good hygienic behavior, less community people were suffered by diarrhea. In the baseline 97 people reported to suffer from diarrhea while in the end line 83 people reported to suffer from diarrhea. Likewise, comparatively less under 5 children in the end line was found to suffer from diarrhea. The enrollment of student in the end line survey seems to be high among the schools.

Conclusions: Impact of the project is positive especially in the field of sanitation, health and hygiene sector. Hand washing with soap, handling of water, use maintains and construction of latrine in school and community were major behaviour change found effective and impressive. Health and sanitation classes and triggering tools found useful to change the attitude and behaviour of community on sanitation. The program intervention in school and community are both physical and behavioural. Safe drinking water, school toilets, water for hand washing and cleaning are
physical part and hand washing, water handling, food hygiene, good use and maintenance facilities, child, gender and friendly social atmosphere are behavioural part. These interventions took place through the assistance of three continuing activities such as communication, advocacy, social mobilization and cross-sectoral planning and implementation. Further the program is one of the successful examples to reach out to the family and community involving all local institutions. Evaluation report proved that program interventions are simple, sustainable and scalable.

DEPRESSION AMONG MALES HAVING SEX WITH MALES (MSM) IN KATHMANDU VALLEY, NEPAL

Shrawan Pokhrel¹, Shyam P Lohani¹, David Wilson ²
¹Center for Health Research and International Relations, Nobel College, Pokhara University, Nepal
²Ohio State University, Columbus, OH

Background: Depression is associated with negative health and psychosocial outcomes and may lead to greater challenges for this marginalized population like males having sex with males (MSM). Our objective was to assess depression among the MSM community.

Methods: Analytical cross-sectional survey was conducted among MSM in Kathmandu valley. The sample was selected by purposive snowball sampling method. Beck Depression Inventory II was used to measure depression. Data entry and analysis was done using SPSS 16.0. Categorical variables were compared using Chi Square Test and Odds ratio was calculated to measure the associations.

Results: A total of 140 respondents were included in the study. Their age ranged from 16 to 50 years, mean 26.3 years (±5.9 years). The majority of them (71.4%) were single and employed (69.3%). About 41% earned NRs 5000-15000 monthly. The vast majority of respondents had moderate level of depression and there was a statistically significant difference between respondents in age groups 16-25 and 26-50 years on difficulty in concentration (p=0.035). There was no statistically significant association between age and variables of depression inventory.

Conclusion: MSM having moderate level of depression clearly demands psychosocial counseling, specifically of those in the younger age group. In our study, these have not caused increased suicidal thoughts however, a larger and more systematic investigation would be helpful in delineating depression among MSM.

Keywords: Depression, MSM, Nepal

STRENGTHENING EFFECTIVE SCHOOL HEALTH PROMOTION IN NEPAL

Lonim Prasai Dixit¹
¹Coordinator, School Health and Nutrition Network, Nepal.  
Email: lprasai@yahoo.com

Introduction: Schools provide an ideal setting for promoting the health of Nepalese school children. It has been very well documented that utilising a school setting for the provision of school health and nutrition services has a substantial impact on the education and health of children. School health promotion is equally effective in promoting the health of school staff, families and the entire community. The Ministry of Health and Population (MOHP) and Ministry of Education (MOE) have shown strong commitment towards health promoting schools. The Government of Nepal (GON) has recognized the importance of healthy school environment in achieving Millennium development Goals.
**Issues:** The School Health and Nutrition (SHN) initiatives aim to strengthen schools for healthy living, learning and working environment. The School Health and Nutrition Strategy (2006) and Child Friendly School Framework (2011) have recognized water, sanitation and hygiene facilities as important components of healthy school environment. However, Studies have reported that many of the 28,057 basic and secondary community schools lack adequate water supply, sanitation and waste disposal facilities. According to the Department of Education (DOE), Nepal has reported a lack of menstruation hygiene in schools as one of the primary reasons for dropout rates in adolescent girls. Despite efforts and policies in place, there is a need to strengthen co operation and roles within the Ministries and stakeholders for effective implementation of SHN activities and achieving the MDGs.

**Descriptions:** According to data from the Department of Education, 41 percent of the population in Nepal are school-age children. Schools in Nepal have basic health and physical education as part of curriculum. However, there is a need for skill-based approaches. A skill-based approach is essential especially in school when children do not have the right conducive environment at home. A basic package of school health and nutrition programme has been developed based on the national SHN strategy. This comprehensive package includes components such as School-Based Health and Nutrition Service, Healthful School Environment, Life Skill-Based Health, Hygiene and Nutrition Education acknowledging an interdisciplinary coordinated and collaborative effort.

**Lessons learned:**
- Lack of Coordination and collaboration efforts between the ministries and multiple stakeholders at all levels.
- Lack of efforts in mobilizing the available local resources and streamlining the implementation process.
- Lack of active involvement and well functioning of child clubs.

**Recommendations:**
- SHN needs to be integrated within relevant Ministries major reform and action plans.
- The Joint Action Plan is a great achievement and a key document that needs to be endorsed by both the ministries for mainstreaming school health and nutrition within the health and education system of the MoHP and the MoE.
- At all levels and linkages needs to be strengthened and local resources used to create healthy school environment.

**Conclusion:** The basic package of the school health and nutrition programme has to be scaled up to the national level to reach as many children as possible in order to achieve the goal of education for all.

**A SYSTEMATIC REVIEW OF STUDIES ON INTIMATE PARTNER VIOLENCE AGAINST WOMEN AND ITS RELATIONSHIP WITH PREGNANCY OUTCOMES IN LOW AND MIDDLE INCOME COUNTRIES: A PRIORITY FOR MATERNAL HEALTH PROMOTION PROGRAMS**

Shophika Regmi¹, Amrit Bhandary, Lindsay Blank

¹MPH Graduate University of Sheffield, ²University of Sheffield

Email: shofica@gmail.com

**Background:** Intimate partner violence (IPV) against women is a wide spread medical, public health and societal problem which affect women without any boundary of race, culture, religion, country and economic class. Due to IPV abused pregnant women are at heightened risk of adverse pregnancy outcomes such as prolonged labor, miscarriage, abortion and pregnancy complications. The purpose of this review therefore is to determine the prevalence and consequences of IPV on pregnancy outcomes of women in low and middle income countries.

**Methods:** Using defined keywords, five electronic databases: MEDLINE (1948-2012 November 4), Embase (1974-2012 November 27), PsycINFO (1967-2012 November week 4), ASSIA and CINAHL along with reference lists of relevant articles were searched for peer-reviewed papers on IPV before and during pregnancy and its consequences on pregnancy outcomes. Search was limited to quantitative articles published in English language with no date limits. 10 scientific papers meeting the inclusion criteria were reviewed. Methodological quality and content of each eligible paper was assessed and analyzed by two reviewers and data were extracted for synthesis. Data on prevalence and odds ratios were reported to explore the link between IPV and pregnancy outcomes.
Results: The review clearly documents high prevalence of different forms of IPV against women ranging from 17.4% (in Cambodia) to 75.6% (in Tanzania). After adjusting for known confounders, two studies showed significant association of IPV with miscarriage and still birth (OR 1.3-1.5), three studies retained a significant link between IPV and induced abortion (OR 1.116-1.94). One study demonstrated that different forms of IPV are strongly associated with low birth weight (OR 2.29-5.35). Five studies showed that women reporting miscarriage, induced abortion and still birth had a history of different forms of IPV (OR 0.61-1.91).

Conclusion: Studies reviewed in this review were of high to moderate quality. The prevalence of IPV against women in low and middle income countries is found to be very high. Further, the strong positive association between IPV and adverse pregnancy outcomes was identified. This review documents the urgent need for universal screening of pregnant women for IPV. Moreover, interventions to address IPV should be integrated into maternal health services. In addition, maternal health promotion activities can contribute to address attitudes, behaviours and social norms that perpetuate IPV. Also the evidence points to the need for further longitudinal studies to identify prevalence and consequences of IPV during and after pregnancy.

STUDENT INVOLVEMENT AND MOBILIZATION IN HEALTH PROMOTION

Anupa Rijal1, Tara Ballav Adhikari
1People’s Health Movement Nepal Students’ Circle
Email: anuparijal@gmail.com

As described by Ottawa Charter, Health promotion as the first level of prevention is the process of enabling people to improve their general health and well being and hence enables people to increase control over and improve their health. Health promotion engraves all the socio-economic, cultural and political dimensions to achieve good health as a resource for quality life. The dynamic young populations during the state of physical, social and mental transition are exposed to various risk factors prone to their health. The holistic approach of health promotion not only demands for interventions to improve the health of these young people, rather it claims for active partnership and involvement to achieve sustainable health behaviours. Mobilization of young people in health promotion mediates and enables the achievement of the fullest health potential at an individual as well as community and national level.

People’s Health Movement–Nepal Students’ Circle (PHM-NSC) mobilized and involved youth in PHM Public Lecture where issues in reproductive rights, political commitment on revitalization of primary health care consumers’ right were discussed. Likewise, peer discussion and PHM theatre sensitized youth about the health issue, and also created a dynamic environment to share and critically appraise genuine health issues and its promotion. To celebrate important health events PHM-NSC organized a health awareness campaign which provided practical exposure to those young people to disseminate health information and demonstrate skills for the promotion of good health. It also provided a platform to tackle the social and cultural hindrances to motivate people to adapt healthy behaviours. Having been youth ourselves and our experience on working among other dynamic and energetic young minds on various health promotion issues through PHM-NSC has shown youth can be responsible partners in health promotion.

The engagement of Young people in health promotion is a challenging yet sustainable and cost effective method of health promotion. Involving young people today will generate streams of health benefits in near future as they are the future leaders, policy makers, health professionals and responsible citizens of the nation. Mobilization of young people in health promotion acted as a bridging channel and strong advocacy media between youth and concerned legal authority to build health public policy. Young people, being close to the family as well as community level, were a very effective source for health issue sensitization, consensus development, information dissemination behavior change communication and reinforcing healthy practices to obtain the highest possible level of health. Health promotion activities helped to develop personal skills and attitude towards positive health practices among the youth. PHM-NSC, being a global forum, meant activities of these young people got an international platform to sensitize the concerned authority for generating political commitment in health promotion.

Health promotion is a continuous task and requires deliberate efforts of all stakeholders. Thus integration of students as major partners in health promotion activities is very necessary for the effectiveness and sustainability of the
program. It also demands for integration and development of health promotion curriculum from very basic school level. Right information, from the right place through to the right person and media is very effective for proper dissemination of the information. So the establishment of information which centers highly equipped resources with information technology and the participation of active young people is an exclusive need of time. Intensifying advocacy and constant lobbying with concerned sectors is necessary to adapt holistic approaches of health promotion in the health service delivery of the nation.

FACTORS ASSOCIATED WITH NEONATAL DEATHS IN CHITWAN DISTRICT OF NEPAL

Rajani Shah1, Bimala Sharma2, Dinesh Kumar Malla3, Usha Kumari Pandey4, Anu VK5

1PhD student in Ludwig-Maximilians-University, Munich, Germany, 2,4,5 Shree Medical and Technical College, Bharatpur, Chitwan, Nepal, 3Birendra Multiple Campus, Bharatpur, Chitwan

E-mail:

Background: Globally, there were 3 million neonates in 2011. The under-five mortality has reduced significantly since 1990 but the decline in neonatal mortality has been slower. In Nepal, neonatal mortality has remained constant at 33 per 1000 live births over the last five years. Worldwide, the proportion of under-five mortality occupied by neonatal deaths increased to 43% in 2011 from 36% in 1990. Therefore, reducing neonatal mortality is indispensable in achieving Millennium Development Goal 4. This study aimed to assess socio-demographic factors, maternal health care and newborn care practices contributing to neonatal deaths in Chitwan district.

Methods: A cross-sectional mixed method study. All neonatal deaths occurred from April 2011 to April 2012 and reported to district public health office through Community-Based Newborn Care Program reporting system included an equal number of survivors selected from the same ward of the Village Development Committee (VDC). A structured interview was conducted from April 2012 to July 2012 with 198 mothers of 99 neonatal deaths and 99 survivors. For the qualitative study, focus group discussions, in-depth interviews and case studies were conducted. Descriptive, bivariate and multivariate analysis of quantitative data and narrative analysis of qualitative data were applied.

Results: More than one third of mothers (34%) had no education, 86% of mothers had an antenatal check-up (ANC), four or more ANC was received by 74% of mothers and the proportion of institutional delivery was 62%. Postnatal check-up (PNC) was received by 65% of mothers. Among newborns getting no PNC, 60% died compared to 45% among those having PNC. The qualitative study found very few deliveries occurring at home, and even in home deliveries, use of safe delivery kit, bathing baby after 24 hours of birth, wrapping in clean clothes were common practice but visiting the health institution for PNC happened only if any health problems appeared. Bivariate analysis showed primary education [odds ratio (OR)= 0.39 (95% CI: 0.18-0.86)], secondary education [OR= 0.35 (95% CI: 0.18-0.69)], low birth weight [OR=3.25 (95% CI: 1.56-6.76)], home birth [OR=2.2 (95% CI: 1.21-3.91)], and those born with assistance of doctors and nurse/auxiliary nurse midwife [OR=0.42 (95% CI: 0.22-0.78)] associated with neonatal deaths. In multivariate analysis, only low birth weight [OR=3.1 (95% CI: 1.42-6.62)] and secondary level education of mothers [OR=0.31 (95% CI: 0.12-0.82)] were significantly associated with neonatal deaths.

Conclusion: Newborns of mothers with secondary level education were less likely to die compared to newborns of illiterate mothers and low birth weight babies were more likely to die during neonatal period compared to babies with normal or above birth weight. Female education and interventions to decrease low birth weight need to be focused to reduce neonatal deaths, as well as health education to mothers about postnatal check-up is also required.

Keywords: Millennium Development Goal, mixed methods, maternal health, newborn, neonatal deaths, Nepal and health education.
DESIGNING STRATEGIES FOR PROMOTING MATERNAL NUTRITION IN NEPAL

Karuna Laxmi Shakya

1PhD Candidate, Institute of Medicine, Maharajgunj
E-mail: karuna201@gmail.com

Background: A woman’s nutritional status has important implications for her health as well as for optimal physical, mental, and cognitive growth, and development of her children. In Nepal, a numbers of interventions address nutrition in women, yet nutrition needs to be addressed multi-sectorially. Hence, a strategic shift is required to achieve Millennium Development Goal (MDG) 5. The National Planning Commission (NPC) has stated that the “Window of Opportunity: 1000 Days”. The main objective of this study is to develop effective strategies to promote maternal nutrition with specific objectives to identify the key factors; and formulate strategies, and recommendations for improving maternal nutrition.

Methodology: This study used secondary data. Maternal health and nutrition was reviewed and primary determinants of maternal malnutrition identified. The systems supporting nutrition interventions and indicators related to maternal nutrition were reviewed. Then, based on the framework of Strength-Opportunity-Aspiration-Result (SOAR), a strategy was developed. Finally, specific, evidence-based, and feasible recommendations were made.

Findings: Strengths: Nepal has a well established public health system network from the National to the Community level. Health facilities at community, sub-district, and district level delivering Primary Health Care include nutrition education to mothers. NPC has initiated multi-sectorial approach involving five ministries and at the district level concerned line agencies. Donors are willing to support this nutrition program. Of the total health budget, 1.77% was allocated for nutrition. Family Health Division (FHD) is responsible for maternal nutrition together with Safe motherhood coordinating by the Child Health Division (CHD). Maternal micronutrient is the main focus area.

Opportunities: Women’s nutritional status improved slightly over years; 18% women were malnourished, 12% were shorter, 18% were thin and undernourished, 35% were anemic, 38% pregnant women took iron tablets for 180 days.

Many believed that pregnancy as a natural condition does not need any particular attention; they have reduced access to food; and usually eat after male members and children. Mothers that recently delivered a baby were considered ‘impure’; and are not allowed to eat with other family members.

Aspirations: Improving nutrition is tied in with improving six indicators of MDG. The Ministry of Health has set as a target to reduce the prevalence of low Body Mass Index (BMI) in women to half that of the 2000 figure; virtually eliminate iodine-deficiency-disorders, reduce worm infestation to less than 10% by the year 2017. The micro-nutrition program is on-track in Nepal with progressing MDG indicators. The currently formulated MSNP has a goal of enhancing human capital by improving maternal nutrition, reducing mortalities, and has shown a high level of commitment.

Results: Thus, therein an improving trend in indicators of maternal nutrition especially in micronutrient, deworming, and maternal mortality. Finally under the SOAR framework, major strategies that establish multi-sectorial nutrition architecture; that strengthen capacity of FHD/CHD include those that ensure food availability, accessibility, affordability, and empower women; improve food and care related behaviours; strengthen community-based nutrition interventions and nutrition programs; and develop a nutrition information system were formed.

Conclusions: Nepal has done well in scaling up; and to date sustaining micronutrient interventions and have had impressive impacts on maternal nutrition. Health sector interventions addressing general maternal under nutrition, however, needs to be improved through strengthening resources, nutrition services, reviewing/designing nutrition interventions. Effective multi-sectorial interventions would help addressing food availability, economics, increasing access and availability in the future.

Keywords: Maternal, nutrition, micro-nutrition, food, Millennium Development Goal and Strength-Opportunity-Aspiration-Result (SOAR).
TAILORING BMI CUTOFF FOR THOSE OVERWEIGHT AMONGST THE MALE EMPLOYEES OF ACADEMIC INSTITUTIONS IN POKHARA

Ishor Sharma1
1Faculty of Public Health, Pokhara University, Lektnath, Kaski
E-mail: sharmaishor@yahoo.com

Background: Being overweight or obese is a recognized risk factor for a multitude of disorders. The disease risk stratification is commonly based on the Quetelets Index (Body Mass Index-BMI), a surrogate measure of fatness. Currently used BMI cut-offs to classify people as overweight or obese have been defined in studies on Caucasian populations. However, because of differences in body structure and composition in different ethnic, socioeconomic, cultural and regional groups, the correspondence between BMI and body fat content varies between populations. Studies have been conducted to define the cutoff for BMI in the Nepalese population, but they are lacking the methodological problem and the cutoffs are lacking high sensitivity and specificity values. This study was conducted amongst the individuals aged 25-60 years in Pokhara valley to define BMI cut-offs for overweight using body fat content as standard derived from bioelectrical impedance analyzer.

Methods: The study was conducted on 123 randomly selected male individuals aged 25 to 60 years from three major academic institutions in Pokhara, Nepal. Body weight was measured to the nearest 0.1 kg in light indoor clothing without shoes, using a digital scale. A correction of 0.5 kg was made for weight of the cloths. Height was measured using a portable stadiometer to the nearest 0.1 cm. BF % was measured using a commercially available digital weight scale incorporating a bioelectric impedance analyzer (HBF-352, Omron Health care Co., Kyoto, Japan). Receiver operating characteristic (ROC) curve analysis was applied to determine the cutoffs for BMI using the body fat as standard. Instrumental validity and reliability was checked before the start of the study.

Results: The mean age, BMI and body fat in the study group was 47.23 years (± 8.72), 25.25 Kg/m2 (± 3.41) and 29.30% (± 4.79) respectively. The prevalence of overweight/obesity was 56.6% by BMI and 83.8% by body fat content. Receiver operating characteristic (ROC) curve analysis defined a BMI of 23.5 kg/m2 as the cut off for overweight with a sensitivity of 86.9% specificity 90%.

Conclusion: The cut off for BMI was found to be 23.5 kg/m2 for overweight with a sensitivity of 86.9% specificity 90% for the study population. This shows BMI cutoffs for the study population is lower than the WHO classification and near to the IOTF (International Obesity Task Force classification).

FACTORS AFFECTING LOW BIRTH WEIGHT AMONG PREGNANT WOMEN ATTENDING POSTNATAL CARE AT PAROPAKAR MATERNITY AND WOMEN’S HOSPITAL, THAPATHALI, KATHMANDU

Pranita Sharma1
1Nobel College, Pokhara University
E-mail:

Background: Babies with a birth weight of less than 2500 grams irrespective of the period of their gestation are termed as low birth weight (LBW) babies. Birth weight is a predictor of infant growth and survival. Infants born with a low birth weight begin life immediately disadvantaged and face extremely poor survival rates. The epidemiological observations have shown that infants weighing less than 2,500 grams are approximately 20 times more likely to die than heavier babies.

Objectives: To access factors affecting low birth weight among pregnant women attending postnatal care at Paropakar Maternity and Women’s Hospital, Thapathali, Kathmandu Nepal.

Methodology: An analytical comparative cross-sectional study was conducted among 200 mothers who just delivered their newborn child at the maternity hospital, Thapathali. Data was collected within a few hours to 2 weeks of delivery depending upon the comfort level of mothers and their willingness to participate. Semi-structured questionnaire was administered to the mothers by conducting face-to-face interviews and referring to medical
An odds ratio was calculated to determine the association between low birth weight and independent variables in the study.

**Findings:** Mean birth weight was 2540 grams of 200 newborns with an almost equal proportion of male and female newborn. More than 50% of females who were surveyed were married before the age of 20 years in this study and a higher proportion of LBW was found among mothers of same age group. Age at marriage was found associated with birth weight (OR= 2.364, CI 95%: 1.337-4.179, p=0.003). Educational status of mother and income of family was not associated with birth weight. Birth weight of the last child and birth weight of the newborn, during the study, was significantly associated. It was found that mothers who had delivered 2.5kg newborn during their last pregnancy are 3.577 times more risky to have LBW newborn during this pregnancy (OR=3.577, CI 95%: 1.278-10.013, p=0.013). Times of ANC checkup and birth weight are found to be significantly associated (OR=1.901, CI 95%: 1.039-3.480, p=0.036). Similar significant association was found between iron tablet intake and birth weight (OR=5.587, CI 95%: 2.158-14.466, p=0). Occurrence of Par Vaginal bleeding and birth weight was also found to be significantly associated (OR=7.579, CI 95%: 2.522-22.779, p=0). Significant association was found between the height of mother and birth weight. Mothers who had height of 145cm and below, were 2.556 times more at risk to bear a LBW newborn (OR= 2.556, CI 95%: 1.403-4.655, p=0.002). Significant association was found between maternal weight gain and birth weight of newborn (OR= 1.836, CI 95%: 1.046-3.222, p=0.033).

**Conclusion:** This study showed that there are various factors interplaying for causation of low birth weight newborn, mothers age at marriage, history of previous low weight child, times of ANC checkup, iron supplementation, Par Vaginal bleeding during pregnancy, height of mother below 145cm and maternal weight gain.

**Keywords:** Low birth weight, cross-sectional, Nepal, antenatal care, age at marriage, height and weight.

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GETTING WOMEN TO CARE: MIXED–METHODS EVALUATION OF A MATERNITY CARE INTERVENTION IN RURAL NEPAL

Sheetal Sharma¹, Edwin van Teijlingen¹, Vanora Hundley¹, Jane Stephens², Padam Simkhada³, Catherine Angell¹, Elisa Sicuri⁴, Jose Belizan⁵

¹School of Health & Social Care, Bournemouth University, UK, ²Director, Green Tara Trust, UK, ³University of Sheffield, UK, ⁴Barcelona Centre for International Health Research (CRESIB), Hospital Clinic/IDIBAPS, Universitat de Barcelona, Barcelona, Spain, ⁵Institute of Clinical Effectiveness and Health Policy, Buenos Aires, Argentina.

E-mail: ssharma@bournemouth.ac.uk

**Background:** The Buddhist charity Green Tara Trust (GTT) set up a program to improve the uptake of maternal care practices in rural Nepal via health promotion activities in the community over 5 years. The programme is novel because it seeks to improve maternal service uptake via bottom-up participatory methods in rural communities. This research aimed to compare the effectiveness of the GTT health promotion strategy, with standard care for mothers in a developing country community setting.

**Methods:** The research was a mixed-methods evaluation of a maternity care intervention in rural Nepal; conducted in collaboration with GTT. Data were collected using a controlled before-and-after, cross-sectional survey; with socio-economic, cost and health uptake questions. A questionnaire-based interview was conducted with 833 women, with their last child less than 2 years old. Ethical approval provided by the Nepal Health Research Council.

**Analysis:** The relation between the number of ANC (antenatal care) visits, belonging to the intervention group, and the respondents’ background (education, household income & parity) was examined.

**Results:** The health promotion intervention appeared to improve ANC attendance. Low educational level, low household income, and multiparty were risk factors for non-attendance. The evaluation suggests that practice should be socio-culturally appropriate and inclusive not only of women but also their families; mother-in-laws’ and men’s participation should be sought.
**Conclusions:** These types of evaluations inform policy; findings can be used to shape policy to be ‘inclusive’ to those marginalised, for example rural communities in Nepal. Furthermore, maternal health promotion is central to achieving maternal health goals nationally and ought to be part of the nurse midwifery curriculum. Finally, funding was provided from Bournemouth University and the Santander Universities’ scheme.

**Keywords:** Maternal health, health promotion, rural, community, intervention, Nepal, MDG5, midwifery, developing country, effective, antenatal and evaluation.

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**LACK OF CONCEPT OF PREVENTIVE HEALTH CARE: THE BARRIERS FOR CERVICAL CANCER SCREENING IN BHARATPUR, NEPAL**

**ATL Sherpa,1, BMS Karki1, Sundby J.2, Clifford G.3, Franceschi S.3**

1KIST Medical College; 2University of OSLO, Norway; 3International Agency for Research on Cancer, France

**E-mail:** sherpadoctor@gmail.com

**Background:** Cervical cancer is one of the most commonly occurring cancers in Nepal. The biggest cancer referral hospital of Nepal, B.P Koirala Memorial Cancer Hospital (BPKMCH) exists in Bharatpur and it provides opportunistic cervical cancer screening services. Numerous studies in different countries have shown that despite the easy accessibility of cervical cancer screening, optimum coverage is a challenging issue. Therefore this study aimed to assess the barriers of cervical cancer screening of women who have access to health services but don’t utilise them.

**Methods:** Population based cross sectional study was carried out from October 2006 to March 2007 after receiving ethical clearance from Nepal Health Research council (NHRC). 1547 ever married women aged 15-59 were selected with cluster randomization procedure from ward number 11 Bharatpur municipalities. A free cervical cancer screening clinic was set up in Bharatpur and participants were invited for a Pap smear. Face to face interviews and the collection of specimen was done in the clinic and reporting of Pap test was done by a pathologist at BPKMCH. Out of 1547 invited women 1033 had a Pap smear taken and among them 56 were excluded from the study due to having had a previous smear taken within the last 6 months. Those who refused were termed as non participant (n=514) and they were interviewed further for reasons of non participation.

**Results:** Non participants were 514(33%). Among them 365(71%) were from non slum areas and 149(29%) were from slum areas. When asked for the reason for refusal to have a Pap smear, three most common reasons mentioned were lack of perceived risk (I feel Okay, no need to have gynaecological examination): 196(38.1%), lack of time: 152(29.6%) and lack of permission from husband or in-laws: 63 (12.3%). Remaining reasons were too sick to come to screening clinic: 44(8.6%), Ashamed to have gynaecological examination: 32(6.2%) and fear of having a gynaecological examination: 27 (5.3%).

**Conclusion:** Screening is the process by which a test is applied to select out asymptomatic individuals at risk of having or developing a certain disease, but in our study we found that the non participants hadn’t understood this concept and was therefore a major hindering factor in accessing the service. Other barriers of cervical cancer screening that we noted in our study were similar to other studies conducted in many developing countries.

Several studies in developing and developed countries have already shown the importance of cervical cancer screening to decrease morbidity and mortality from cervical cancer. Hence cervical cancer screening is very important in a country like Nepal where the disease burden is high. For successful screening program, high coverage (80%) of the population at risk of disease is necessary and this is only possible through effective health promotion activities. Therefore based on our finding we would like to recommend that cervical cancer screening program in Nepal should put more emphasis on proper health education for effective health promotion.
COMMUNITY HEALTH PROMOTION PROJECTS IN NEPAL APPROACHES AND ISSUES

Binjwala Shrestha1, Kabiraj Khanal2
1Institute of Medicine, Department of Community Medicine and Public Health, 2Ministry of Health and Population
email: binjwala_shrestha@hotmail.com

Introduction: Community Based Health Promotion (CBHP) projects are mainly aimed to develop sense of ownership and responsibility of communities for their health, improve healthcare seeking behaviour in communities and to increase coverage, access to, and utilization of preventive and curative health services. The principles and values for effectiveness and sustainability are: ‘right based approach’, participation, coordination and collaboration, build on existing programmes and activities, maintain equity and social justice, use of a variety of approaches and methods, evidence of effectiveness, transparent and accountable and information dissemination (as per the World Health Organisation). In Nepal, various national (NGOs) and international organisations (INGOs) are contributing to community health development implementing CBHP projects. This paper aims to highlight the success and gaps observed while evaluating some projects supported by international donor agencies on behalf of the Social Welfare Council of Nepal.

Project description: We evaluated eight projects on individual capacity and on behalf of Social Welfare Council. Some of the projects were supported by INGOs and some others by UN agencies. Most of the projects were launched with local community mobilisation. Major themes of projects were safe motherhood initiatives, child health, HIV/AIDS, Leprosy elimination, Malaria control, family planning, prevention and treatment of uterine prolapse, and finally, population and reproductive health in various districts of Nepal. The major community activities were targeted to a specific population as per the project indicators with both the Village Development Committee based and the wider District based. The main strategy of community health promotion was empowerment of communities through participatory processes.

Method: The evaluation was (midterm and final) conducted using the standard guidelines of Social Welfare Council, which were focused to assess the efficiency, effectiveness and sustainability of the projects. All together eight different projects were evaluated. Secondary and primary sources of data were collected and analysed; and quantitative and basic qualitative methods were used for these evaluations.

Result: Most of the projects were effective, they used the principle of ‘right based approach’, participation, equity and social justice, and continuous follow-up systems. The accountability and transparency, however, was questionable in most of the projects. Similarly, most of the projects might not be sustainable in the end, as the project activities were not properly coordinated and collaborated within the local health system and furthermore were not ‘built on’ existing programs. Some projects worked in parallel with mothers’ groups and the Primary Health Care Outreach Clinics to engage community mobilisers, the Female Community Health Volunteers. Yet, this negatively affected the existing community based health promotion program. Out of eight projects only 2 projects can be sustained as this has been incorporated with existing health service delivery system.

Conclusions: The projects of community health promotion are implemented under the policy of the Ministry of Health Public Private Partnership model. Most of the projects were effective, although not efficient. The indicators of sustainability were not achieved. Some projects may pose challenges to the existing health system, by providing incentives and additional services without coordinating the system. The concerned development sectors and council should be vigilant and ensure coordination with the local District Health Office and District Development Committee to ensure sustainability.

Keywords: Community Based Health Promotion (CBHP), NGO, Nepal, evaluation, empowerment, participatory processes, efficiency, effectiveness and sustainability.
THE CURRENT STATUS OF HEALTH REPORTING IN NEPALI PRESS

Sabita Tuladhar¹, Khem Raj Shrestha², Nimesh Regmi¹, Ashoke Shrestha¹, Bharat Ban
¹ Nepal Family Health Program II, Patan Dhoka
² Health Journalist Association of Nepal, Babarmahal
E-mail: khemraj_krash@hotmail.com

Background:
With the introduction of the New Communication Policy-1992, both the electronic and print media flourished in Nepal. Print media among other media are important because of its ability to present news and views in detail, thus stimulating individual's level of understanding. As in other fields, the importance of newspapers in health is also significant, suggesting need of research on the quality and the quantity of health reporting in the Nepali press.

Methods: The Health News Clipping Project studied 11 dailies and 7 weeklies for 28 months to understand the range of health topic covered in the press. Out of the 5,968 health reports captured by the project, the contribution of the Gorkhapatra, Kantipur and Annapurna post was prominent. More than 90% of the reports were News and 83% of the health reports were published in the middle pages, and they mostly covered national level issues. The project tracked 42 health related key words in the reports where health facility, health worker, ministry of health and population, district public health offices, and drug supply were ranked at the top five. Content analysis of sample reports showed domination of communicable diseases, health system and service delivery, and governance issues in the reports.

Findings: Health journalism in Nepal is a new area of research. Monitoring of health news in print media is important, not only for improving quality of the health reports but also to improve the health of people by increasing awareness. The Ministry of Health and Population of Nepal should initiate the monitoring of press media in terms of health reporting taking lessons from this project.

Key words: Nepal, media, health reports, newspapers

HEALTH EXHIBITION: A STRATEGY FOR PROMOTING HEALTH

Khem Raj Shrestha
¹Nepal Family Health Program II, Patan Dhoka
E-mail: khemraj_krash@hotmail.com

Background: The Health Exhibition is a community-based information, education, and communication [IEC] event designed to make families in rural and remote Nepal aware of the importance of health services. The activity is component to social mobilization efforts in accordance with the National Family Planning Behavior Change Communication Strategy (2011-2015) of the Government of Nepal. NFHP II was a lead partner to the Ministry of Health and Population (MOHP) in strategic behavior change communication [BCC] and coordinates health promotion interventions relevant to safe motherhood, child health, neonatal health and family planning. In 2008, NFHP II piloted the Health Exhibition in three core program districts (CPDs), Sindhuli, Dailekh, and Rolpa to meet three major objectives: 1) Increase knowledge and awareness and stimulate demand for safe motherhood, family planning, and child health; 2) Strengthen health service referral systems in rural and remote areas.

Intervention: The Health Exhibition was offered in district areas where poverty and distance to health care providers limit rural women and their families from receiving essential health information and services. Interactive education programs are coupled with the display and dissemination of print media to raise awareness regarding the causes and determinants of poor maternal, neonatal and child health. Select family planning services are also offered. The event targeted individual women of reproductive age (15-49 years) and their families, but involves male and female audiences of all ages in event activities. All attendees were invited to engage in featured programs and entertainment irrespective of need for health services and/or level of current health knowledge and awareness.

Health promotion activities presented at the event were selected exclusively by programme planners and uniquely adapted to suit the preferences of local audiences and relevant situational contexts, such as using local languages for featured activities. Each activity was an independent presentation that features a combination of information about safe motherhood, child health, communicable disease, family planning, and HIV/AIDS. All activities carry
some emphasis on inter-personal communication by integrating group counseling, role-play, and guided discussion approaches. A majority of activities explore how value systems emergent from media and societal messaging influence perceptions of health behavior change. A detailed description of selected Health Exhibition activities were follows:

**Health Information Stalls** provide a standing display of flipcharts, posters, and leaflets conveying strategic messages for positive health practice related to all major health themes. The literature and pictorial content of selected print materials were researched and developed by the National Information, Education, and Communication Center of the MOHP in collaboration with NFHP II. Local health workers facilitate discussions, group counseling and referrals regarding featured information at each presentation stall.

**The Health Song Competition** engages FCHVs in the innovation of culturally specific health promotion tools through the development of songs teaching healthy skills and behaviors styled after local folk music. FCHVs arrange themselves in groups of five to compose and perform an original song before gathered Health Exhibition audiences and a panel of judges selected from the community. The activity further aimed to strengthen health service referral systems by introducing FCHVs as knowledgeable leaders in community health.

**The Inter-School Health Quiz Competition** tests the general health knowledge of secondary school students in a 40-question game that challenges both contenders and audience members to identify behaviors and providers that support healthy living. A quiz-master selected from among local health workers presents questions to teams of three students representing each school and reinforces the messaging from each quiz question with supplemental information and referral. A community panel of judges determines winners.

**Family Planning Counseling** was provided at Health Exhibition locations using the *Prajanan Swastha Paramarsa Sewa Samagri* educational toolkit developed by NFHP II and the MOHP in 2010. The toolkit provides a reference for health workers regarding a variety of reproductive health issues including symptoms of common sexually transmitted diseases, traditional and modern contraceptive methods, and guidelines for treatment. Counselors couple health education with the distribution of condoms and oral contraceptive pills.

Resource and coordination capacity permitting, clinical services for the provision of modern contraceptive methods are made available at the Health Exhibition. Services include implants, and intrauterine contraceptive device (IUCD) insertion. In addition, when Health Exhibitions coincide with the MOHP’s voluntary surgical contraception (VSC) camps, interested Health Exhibition attendees are given free or with significantly reduced cost vasectomy and minilaparotomy procedures. The decision to solely provide family planning services was based on demand – most of the remote, rural areas where Health Exhibitions are held show low contraceptive prevalence rates.

**Results:** A program reception of 16,000 total individuals in three districts in 2009 marked the first successes of the Health Exhibition intervention. Based on this accomplishment, in 2009/2010, activity coverage expanded to 88 sites across ten districts in the Eastern Terai region. These events attracted an estimated total of 178,535 individuals. Approximately 57% of the total was female and 43% was male. Out of a total of 169 people surveyed, approximately 95% found the information presented at the event useful for their families and themselves. Thirty nine percent of respondents indicated awareness of any behavior change benefit related to family planning, while 40.5% desired family planning services after receiving information at the Health Exhibition. The proportion of those surveyed frequenting educational-entertainment activities suggests that these programs offer the highest level of exposure to health information: 70% visited health stalls, 75% observed the inter-school quiz show, and 67% observed the song competition.

In 2009, two Health Exhibitions were held in conjunction with voluntary surgical campaign in Dang resulting in the delivery of a total of 406 mini-laparotomy procedures. Based on the success of the Health Exhibitions in the 13 districts, there are plans to expand this program to other remote areas in the future.

**Lessons Learned:** Community involvement increases the likelihood of proper resource management, while building the capacity of local leaders to adopt practices and skills in planning the best use of available resources enables sustainable community development.

Interpersonal communication approaches including group counseling and peer education are highly effective for carrying out participatory, culturally oriented, and audience-specific community health education.
**Challenges:** Clear indicators and measurement tools have not been finalized in activity design. Little is known, therefore, regarding Health Exhibition outcomes beyond individual reports and anecdotal information. Inevitable variation in the message consistency and quality of interpersonal health promotion interactions introduce monitoring and evaluation challenges.

**Recommendations:** Effective health behavior change program design must include interpersonal communication components to foster and sustain individual behavior change.

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**HEALTH LITERACY OF COMMON OCULAR DISEASES IN NEPAL**

*Mohan Krishna Shrestha*¹; Christina Guo²; NhuKesh Maharjan¹; Reeta Gurung¹; Sanduk Ruit¹

¹Tilganga Institute of Ophthalmology, Kathmandu Nepal, ²University of Melbourne

Email: research@tilganga.com.np

**1. Background:** Poor health literacy is often a key cause of lack of or delayed uptake of health care services. The aim of this study was to assess the health literacy of common ocular diseases, namely cataract, glaucoma, night blindness, trachoma and diabetic retinopathy in Nepal. The study also investigated the relationship between health literacy and its determinants such as age, gender, location of habitation and level of education.

**Methods:** A cross sectional study of 1741 participants randomly selected from non-triaged attendants in the outpatient queue at Tilganga Institute of Ophthalmology, a semi urban general population of Bhaktapur district of Kathmandu Valley and patients attending rural outreach clinics. Participants responded to trained enumerators using verbally administered, semi structured questionnaires on their awareness and knowledge of cataract, glaucoma, diabetic retinopathy, night blindness, and trachoma.

**Results:** The awareness of cataract across the entire sample was 49.6%, night blindness was 48.3%, diabetic retinopathy was 29%, glaucoma was 21.3% and trachoma was 6.1%. Patients presenting to rural outreach clinics had poorer awareness of cataract, glaucoma, diabetic retinopathy, night blindness and trachoma compared to those from a semi-urban community and an urban eye hospital (p<0.001). Old age was directly associated with poorer awareness of cataract (p=0.005), glaucoma (p=0.001), night blindness (p<0.001), trachoma (p=0.019) and diabetic retinopathy (p<0.001). Female gender was associated with lower awareness of cataract (p<0.001), glaucoma (p=0.007), night blindness (p<0.001) and trachoma (p<0.014). Literacy was associated with greater awareness of cataract (p<0.001), glaucoma (p<0.001), diabetic retinopathy (p<0.001), night blindness (p<0.001) and trachoma (p<0.001). Higher education was significantly associated with greater awareness of cataract (p=0.037), night blindness (p=0.037) and trachoma (p=0.005).

**Conclusions:** Low awareness of common ocular conditions is associated with factors such as female gender, old age, lower levels of education and rural habitation. Potentially successful health promotion programs should specifically target health determinants to promote health literacy and to ensure timely utilization of eye care services.

**Key Words:** cataract, diabetic retinopathy, glaucoma, health literacy, Nepal, night blindness, trachoma
CHANGING TRENDS ON THE PLACE OF DELIVERY: WHY DO NEPALI WOMEN GIVE BIRTH AT HOME?

Saraswoti Shrestha¹, Bilkis Banu¹, Khursida Khanom ¹ , Liaquat Ali ¹, Narbada Thapa ², Babill S Pedersen³ and Bhimsen Devkota ⁴

¹Department of Health Promotion and Health Education, Public Health, Bangladesh Institute of Health Sciences, Dhaka, Bangladesh, ²Department of Community Medicine, Nepal Army Institute of Health Sciences, Kathmandu, Nepal, ³Division of Women and Children, Oslo University Hospital Riks hospital and University of Oslo, Norway, ⁴Department of Health Education, Faculty of Education, Tribhuvan University, Kathmandu, Nepal,
E-mail: saraswoti2001@yahoo.com

Background: Home delivery in an unhygienic environment is common in Nepal. This study aimed to identify whether practice of delivery is changing over time and to explore the factors contributing to women’s decision for choice of place of delivery.

Methods: A community based cross sectional study was conducted among 732 married women of reproductive age (MWRA) in Kavrepalanchok district of Nepal during 2011. Study wards were selected randomly and all MWRA residing in the selected wards were interviewed. Data were collected through a pre-tested interviewer administered questionnaire. Chi-square and multivariate analysis was used to examine the association between socio-demographic factors and place of delivery.

Results: The study shows that there was almost a 50% increase in institutional delivery over the past ten years. The percentage of births delivered in health institutions has increased from 33.77% before 10 years to 63.88 % in the past 5 years. However, the place of delivery varied according to residence. In urban areas, most women (72.3%) delivered in health institutions whilst only 35% of women in rural areas and 17.5 % in remote parts delivered in health institutions. The key socio-demographic factors influencing choice of delivery place include the parents’ education, ethnicity, residency, multi parity, teen-age pregnancy and the lack or absence of antenatal visits. Having a distant health center, difficult geographical terrain, lack of transportation, financial constraints and a dominant mother- in-law were the other main reasons for choosing a home delivery. Psychological vulnerability and insecurity of rural women also led to home delivery, as women were shy and embarrassed about visiting health staff.

Conclusion: The trend of delivery at health institutions has increased remarkably, but there are strong differentials in education, urban-rural residency and low social status of women. Shyness, dominance of mothers in law and beliefs in faith were one of the main reasons contributing to home delivery.

Key words: Home Delivery, Institutional Delivery, Changing Trends, Nepal

POLYCYSTIC OVARIAN SYNDROME AND HYPOTHYROIDISM IN RELATION TO THE OUTCOME OF TREATMENT AMONG INFERTILE WOMEN: A CASE CONTROL STUDY.

Uma Shrivastava¹, Puja Pradhan¹

¹Infertility Centre, Bijulibazar, Kathmandu
Email: dr.ushrivastava@gmail.com

Background: Polycystic Ovarian Syndrome (PCOS) has been identified as one of the major causes of female infertility and its prevalence has increased to 18% when looked at through different diagnostic criteria. Numbers of studies have shown that women with PCOS often have abnormal thyroid function. Hypothyroidism is also associated with an ovulation and infertility in female. Thus, there is an association between PCOS and thyroid function, which may affect the outcome of fertility in women receiving treatment for infertility. The objective of the study is to determine association between PCOS and hypothyroidism in the outcome of fertility among infertile women.

Methods: The study was conducted at the Infertility Centre, Bijulibazar, Kathmandu, Nepal a tertiary level of infertility
A case control study of 160 infertile PCOS women with or without hypothyroidism seeking treatment for infertility made the sample of the study. Cases were patients with PCOS receiving treatment for infertility with no pregnancy outcome. Controls were patients who received treatment for infertility with positive fertility outcomes. Hypothyroidism status was taken as exposure. PCOS was diagnosed by the Rotterdam 2003 criteria, which includes irregular cycle, hirsutism, increased Body Mass Index, high serum LH: FSH ratio and ultrasonic view of multiple cortical follicles in both ovaries. Hypothyroidism was diagnosed by increased serum TSH level > 5mIU/L. These women were treated for both PCOS and Hypothyroidism. They received Clomiphene citrate and Gonadotrophins for ovulation induction, metformin for possible insulin resistance and levothyroxine for hypothyroidism. This case control study used Odds ratios for the measure of association between outcome and exposure which was calculated as 95% CI.

Results: There was a significant difference between the outcome of treatment in infertile PCOS women with hypothyroidism and normal thyroid function: common odds ratio 2.22(95% CI 1.15-4.27). Risk analysis was done using matched case control study of TSH: common odds ratio 7.58 (95% CI 5.83-9.86) showed poor fertility outcome in hypothyroid PCOS in comparison to normothyroid PCOS.

Conclusion: The outcome of infertility treatment was affected by the association of PCOS with hypothyroidism in comparison to normothyroidism. Although, apart from hormonal factors, other factors such as metabolic factors, stress and quality of life might also have interfered to some extent during the treatment, this study has shown a synergistic role of PCOS and hypothyroidism in infertility.

Keywords: Polycystic Ovarian Syndrome, Hypothyroidism, infertile women, outcome and case control study

CONTEXTUAL DEFINITION OF WOMEN EMPOWERMENT BASED ON THE LOCAL SITUATION OF WOMEN AND YOUNG GIRLS USING THE PARTICIPATORY APPROACH

Ram Chandra Silwal1, Jane Stephens 2, Padam Simkhada P3 and Edwin van Teilingen4
1Green Tara Nepal, Kathmandu, Nepal, 2Green Tara Trust, UK; 3The University of Sheffield, 4The University of Bournemouth
Email: ram@greentara.org.np

Background: United Nations Population Information Network (UNPIN, 1995) defines women empowerment in order to encompass the women having a sense of self-growth, access to opportunities and resources, choices and ability to exercise them, control over their own lives, and influences over the direction of social change. Health seeking behaviours of the women are highly dominated by the level of their empowerment. Setting a locally defined indicators was essential regarding women empowerment since it is a vague subject and universal definition cannot be equally applicable in every condition. This study aimed to find out the women’s decision-making in seeking care and their attitudes towards being beaten by their spouses and against denying on several issues. In addition, it aimed to explore how local definitions of changes to empowerment could be considered in relation to its definition of health promotion.

Methods: A cross-sectional study was conducted in 7 VDCs of Nawalparasi; boardering India with a population from the Terai. More than 90% of the respondents were from terain ethnicity including muslims. Six hundred and twenty nine women having less than one year living children and 428 young girls (aged 16-24 years) were interviewed in June 2012. This work was supplemented with Focus Group Discussions (FGD) with both types of respondents. Data were analysed using SPSS for quantitative method and manual for qualitative data.

Results: Less than 2% of the women were members of local organisations. Only 7% of them could decide to seek care in the event of an illness. Nearly half (48%) of the women and one third (34%) of the young girls agreed that beating was acceptable if they go out without telling their husband. A similar proportion of the respondents revealed that beating is acceptable if they neglected their children. No significant difference was observed between women and young girls on issues such as arguing with their husband, refusing to have sex or burning foods. Discussions with women and young girls revealed that their husbands, mother/ in-laws and father in-laws make the decisions regarding their health. Decisions about their marriage was or will be made by the other family members. Women feel it is acceptable if they were sometimes beaten by their drunk husbands. Young girls also explained high discrimination between boys and girls. Women tended not to go to market or health facilities without consulting male members. These were usual behaviours and it was felt society infers it unacceptable to seek services from male care providers or to take lifts on a neighbours motorcycle.
Conclusion: Women empowerment is a multi-sectoral approach and health promotion can engage the target beneficiaries to increase access and create demand for health services. Achieving women empowerment according to UNPIN definition is still a long journey in communities like Nawalparasi. In this study, we used indicators of Demographic Health Survey (2006) to measure the level of women empowerment; however, such indicators were taken as normal and acceptable behaviours at the local level because of the high domination of patriarchial value and system. Community defined women empowerment and engaging them in right based advocacy according to local contexts are essential to sustain such behaviours in the long run.

EVALUATION OF COMMUNITY-BASED HEALTH PROMOTION INTERVENTIONS: CONTROLLED BEFORE–AND-AFTER-STUDY

Padam Simkhada¹, Edwin van Teijlingen², Jane Stephens (Karunamati)³, Ram Chandra Siwal⁴, Sheetal Sharma⁵, Bibha Simkhada⁶, Sally Woodes Rogers⁷, Manita Sharma¹, Ishwari Nepal¹
¹The University of Sheffield, ²The University of Bournemouth, ³Green Tara Trust, UK, ⁴Green Tara Nepal, Kathmandu, Nepal, ⁵The University of Bournemouth, ⁶The University of Aberdeen, ⁷Green Tara Nepal
E-mail: p.simkhada@sheffield.ac.uk

A community based controlled before and after study (CBA) was performed in rural Nepal during 2008-2012. The study covered four communities (2 intervention/2 control) with total population of 20,000. Intervention activities were implemented by 2 trained health promoters (HPs) over a 5 year period. The major interventions included women group formation and training, home visit, baby blanket distribution for those who complete the 4 ANC visits, health massages through mass event during local festival, and support to local health facilities. Interventions focused on promoting early ANC attendance and completing four sessions. This paper analyses the impact of the interventions on the utilization of antenatal care and women’s decision making power.

All married women in the reproductive age group (15-49 years old) residing in the study area who had delivered their last baby within the last 24 months preceding the study were interviewed using a structured questionnaire. A total 412 women (208 in intervention and 204 in control) were interviewed in 2008 and 421 women (217 in intervention and 204 in control) were interviewed in 2012 for evaluation.

Majority of intervention women had at least one ANC check-up during their last pregnancies in compare to control community. Similarly, the percentage of women who had minimum of four ANC check-ups prior to delivery had increased in both communities but there was a greater increase in the intervention areas. Women’s decision making power for ANC improved significantly more in the intervention community compare to the control community.

The study has demonstrated the effectiveness of community-based health promotion intervention in promoting the utilization of antenatal care and women’s decision-making. This improvement is attributed to the HP’s home visits, women groups, incentives (baby blanket) and the close collaboration with existing health services and the wider community.
PREVALENCE AND FACTORS ASSOCIATED WITH ANAEMIA AMONG PREGNANT WOMEN ATTENDING ANC CLINICS OF KATHMANDU DISTRICT

Sabi Singh¹
¹Nobel College, Sinamangal

Anaemia in pregnancy is associated with increased rates of maternal and perinatal mortality, premature delivery, low birth weight and other adverse outcomes. This study was conducted to determine the prevalence of anaemia among pregnant women attending ANC Clinics of Kathmandu District and to assess the factors associated with it during pregnancy. A descriptive cross-sectional study was conducted on 210 randomly selected pregnant women attending two selected antenatal clinics. Data related to socio-demographic characteristics, medical, obstetric and behavioral histories were collected using an interview questionnaire. The hemoglobin level was obtained from the last recorded values in the patients’ files and women without the record file were excluded from the study. Anaemia was defined as a hemoglobin level of less than 11gm%. Statistical analysis was performed using SPSS version 16 and categorical variables were compared using the chi-square test.

The observed prevalence rate of anaemia found in this study was 31% and was higher among women aged 16 to 20 years, with problematic menstrual histories and pregnancies and who do not consume the prescribed iron supplements regularly. No association was seen between the type of family, gravida, occupation, family planning methods used, consumption of extra food during pregnancy and their status of anaemia. Physicians should provide proper counseling to all pregnant women regarding the regular consumption of iron supplements as prescribed along with its importance during pregnancy. Health professionals should pay more attention to teach pregnant women good long-term dietary habits as a part of an overall approach to health promotion.

HEALTH PROMOTION INTERVENTION DESIGN: RURAL MATERNITY CARE & EMPOWERMENT

Jane Stephens (Karunamati)¹, Edwin van Teijlingen², Padam Simkhada³, Ram Chandra Siwal⁴, Sheetal Sharma², Bibha Simkhada³, Sally Woodes Rogers², Manita Sharma⁴, Ishwari Nepal⁴
¹Green Tara Trust, UK, ²The University of Bournemouth, ³The University of Sheffield, ⁴Green Tara Nepal, Kathmandu, Nepal, ³The University of Aberdeen, ⁴Green Tara Nepal

This paper outlines the stages of the Health Promotion planning process that underpinned the design and implementation of a community-based intervention aimed to improve rural women’s lives. We describe and analyse the needs assessment, planning, structure and development of a community-based health promotion intervention in rural Nepal. This intervention, funded by a UK charity called Green Tara Trust differs from many interventions in industrialised countries where a new health promotion intervention is introduced in the context of a complex pre-existing mixture of health education and health promotion interventions.

Our health promotion intervention is fairly unique in Nepal, as it is: (a) multidisciplinary; (b) theory-based; and (c) evidence-based. The intervention started with a participatory community-based needs assessment and a consultation around the first design by funders and academics in conjunction with local policy makers and other participatory activity. Where possible, Green Tara incorporated the diverse/changing needs of the local communities and made best use of the existing resources whether these were delivered by the government or by non-governmental organisations (NGOs). Helping to improve the local maternity service provision and advocate its uptake makes it much more likely that the intervention becomes sustainable compared to the introduction of an expensive external intervention which is new to the community.
The session outlines the importance of a health promotion in Nepal. It details the five approaches to health promotion: (a) the medical or preventive approach; (b) efforts to change behaviour; (b) health education interventions; (d) issues around empowerment; and, last but not least, (e) wider social change in society.

The presentation also highlights the key elements of what many regard as a good health promotion approach. Starting with (a) developing healthy public policy, and at an individual level (b) develop personal skills. At the level of the community a good health promotion approach would include (c) strengthening of community action and (d) creating supportive environments for people to be able to make healthy lifestyle choices. Finally, at a community and at a national level health promotion should aim to (e) reorient health services to become more prevention-focused health services.

COMMUNITY BASED INTERVENTIONS TO PREVENT MAJOR NCD RISK FACTORS IN THE INDIAN STATE OF KERALA

K R Thankappan

Kerala is the most advanced Indian state in terms of Epidemiological Transition and has the highest prevalence of most of the non-communicable diseases (NCD) and risk factors. It is the diabetic capital for India with a prevalence of 14.8% in the age group of 15-64 years and the age adjusted cardiovascular mortality is twice that of the United States. The men: women ratio of acute coronary syndrome (ACS) admissions in Kerala decreased from 23:1 in 1967 to 4:1 in 2007 indicating an increase of ACS among women. Similarly age adjusted breast cancer incidence has shown an increasing trend in pre-menopausal women. Tobacco use, alcohol use, unhealthy diet and physical inactivity are the four major risk factors of NCDs. All the above risk factors are highly prevalent in Kerala. As Kerala could be a harbinger of what will happen in the future to the rest of India and similar developing countries, prevention and control of NCDs in Kerala becomes a priority. A community intervention for health was a project supported by the Oxford Health Alliance UK in three countries: China, India and Mexico. This presentation will include some of the potential NCD prevention and control measures in Kerala which could be replicated in the rest of India as well as other low resource settings.
OPEN DEFECTION FREE CAMPAIGN AN EMERGING PUBLIC HEALTH INTERVENTION IN NEPAL.

BB Thapa¹, Dikshya Mainali¹

¹ SEBAC-Nepal
Email: bbthapa2009@gmail.com

Issues: Nepal has sound policies, guidelines, environment and institutional arrangements for acceleration of sanitation campaign within the framework of “National Sanitation and Hygiene Master Plan 2011” and the sanitation bottleneck has been identified and recommended for the “Millennium Development Goal Acceleration Framework for improving access to sanitation”. There is huge gap between policy documentation and its operation. Sanitation and hygiene are neglected issues. Further, subsidy policy and its intervention reality, political instability and sanitation marketing have added a challenging prospect.

Descriptions: Access to national sanitation coverage has increased from 30% to 62% over a period of 11 years, from 2000 to 2011; taken as a rate of sanitation increment of 2.9% per annum. According to the government’s plan of achieving improved sanitation coverage 100% by 2017. The rate of increment has to be raised to 4.5% per annum to achieve the national target. Yet 38% of people lack access to sanitation/toilet and majority of population lack hygiene behavior practice.

At present, 5 districts (Chitwan, Kaski, Tanahu, Magdi and Pyuthan) out of 75 districts and 650 Village Development Committees (VDCs) bar 4000 VDCs have been declared Open Defecation Free (ODF) zones in the country; which represents merely 5% of the total districts and 16.25% of the total VDCs. As reported from Out Patients Department (OPD), 75% of them visit for water and sanitation related diseases (Nepal demographic and health survey 2011, MOHP, March 2012). Every year, 10,500 children, under 5 years of age die of diarrhoea and pneumonia due to a lack of clean drinking water and sanitation facilities. The diarrhoeal epidemics are regularly experienced throughout the country with higher intensity in Mid and Far-Western Regions (FWR). Due to diarrhoeal outbreaks (2009) there was a loss of 371 lives.

Lessons learned: If we efficiently mobilize the institutional arrangements D/VWASHCCs including schools to collaborate and communicate among sectorial stakeholders for generating resources, managing delivery effectively with non subsidy approaches, it is possible to achieve ODF status in the targeted VDCs/districts. The role of the government and the ownership by the communities in preparing plan and local policies and systems will be an important key element in achieving ODF status. The ODF declaration approach, which was adopted by SEBAC-Nepal in 11 VDCs of Achham, had media mobilization, community ownership, institutionalized institutional arrangement, a ‘no subsidy’ policy. Its creation played a vital role for social movement to build safe sanitation and hygiene behavior practice in the society. By successful intervention of WASH, we can break disease transmission route of various Neglected Tropical Diseases in the country and control more than 75% of waterborne disease to save lives of thousands.

Recommendations: Existing institutions should be institutionalized and ensure sustainability. Sanitation improvement should be part of organized campaigns. The commitment from governmental organizations, political parties, journalist and other non-governmental sectors should be strengthen with a ‘no subsidy’ policy framework for toilet coverage. The trainings and techniques can be triggered by media mobilization. By increasing ownership at the grass-root level stakeholders and optimally utilizing local resources; strengthening grass-root level institutions through a common vision, unified planning and implementation, and collective result framework.

Keywords: sanitation, hygiene, Nepal, Open Defecation Free, diarrhea, community, rural.
DETERMINANTS OF PELVIC ORGAN PROLAPSE AMONG THE WOMEN OF WESTERN PART OF NEPAL: A CASE CONTROL STUDY

Subash Thapa¹, Mangesh Angdembe²
¹Department of Public Health Nobel College, Pokhara University Sinamangal, Kathmandu, ²School of Public Health and Community Medicine B. P. Koirala Institute of Health Sciences Dharan
Email: soobesh@gmail.com

Objective: Pelvic Organ Prolapse (POP) is considerably higher in Western Nepal compromising the quality of life of affected women, with far reaching consequences not only for their physical health, but also for their sexual lives and their ability to work and earn a livelihood. Till date, very few studies on the risk factors of POP have been documented; those reported studies lack appropriate design and power of analysis. In the current study, an attempt has been made to identify the determinants of POP among the women of western part of Nepal.

Materials and methods: This was a matched case control study conducted among the women attending reproductive health services in nine different camps in the Western part of Nepal in 2010. Cases included were the women suffering from third and fourth degree POP and controls were the women who were screened and confirmed of not having any degree of POP. Women having first and second degree POP as well as women aged below 15 years and above 50 years were not included. The Baden-Walker System for the Evaluation of the Pelvic Organ was used to identify and categorize the cases. The cases were randomly selected from the record. For each case identified, one control was selected and matched by age and place of residence. A semi-structured interview was carried out to obtain the information for both the intervention and control groups. A power analysis was carried out taking the proportion of exposed in the control group as 0.5, the anticipated odds ratio as 2.1, the level of significance as 0.05, power as 95% and 1:1 case control ratio to determine the necessary sample size of 183 cases and 183 controls. All analyses were carried out using PASW statistic version 18.0™. A conditional logistic regression analysis was carried out for the variables whose association with POP was found significant from chi-square statistics. The control variables were at first entered and fixed into the model and then, in each step one selected exposure variable was entered into the model and was repeated same for all the other selected variables.

Results: The results of bi-variate analysis showed that the educational status of women, carrying a heavy load, delivery assisted by a health worker, duration of labour, vaginal tear in their last childbirth, sphincter damage in their last childbirth, rest after delivery, and incidence of diarrhoea were found to be associated with POP. However, the conditional logistic regression analyses identified that only number of vaginal deliveries, tear of vagina in the last childbirth, sphincter damage in the last childbirth and duration of labour in the last childbirth were significantly associated with POP, after adjusting with educational status of the women, carrying heavy load, type of usual work and incidence of diarrhoea.

Conclusion: The results suggest that prolonged labour along with vaginal delivery having sphincter and vaginal tear are the determinants of POP and program managers should strongly consider these factors to develop interventions targeting to prevent POP and promote health and wellbeing of women of the Western part of Nepal.

Keywords: Pelvic Organ Prolapse, Western Nepal, matched case control study, women and maternal health.
FACTORS ASSOCIATED WITH HIGH PREVALENCE OF PULMONARY TUBERCULOSIS IN HIV INFECTED PEOPLE VISITING FOR ASSESSMENT OF ELIGIBILITY TO HIGHLY ACTIVE ANTI-RETROVIRAL THERAPY IN KATHMANDU, NEPAL

Bishnu Raj Tiwari\textsuperscript{1}, Bimala Sharma\textsuperscript{2}, Sarala Malla\textsuperscript{3}, Prakash Ghimire\textsuperscript{4}

\textsuperscript{1}School of Health and Allied Sciences, Pokhara University, Lekhnath, Kaski, Nepal, \textsuperscript{2}Gandaki Medical College, Lekhnath, Kaski, Nepal, \textsuperscript{3}National Public Health Laboratory, Kathmandu, Nepal, \textsuperscript{4}Central Department of Microbiology, Tribhuvan University, Kathmandu, Nepal.

\textbf{Background:} Tuberculosis is the leading cause of deaths among HIV patients. In this study, we estimated the prevalence of Pulmonary Tuberculosis (PTB) and identified the factors/co-morbidities associated with active pulmonary tuberculosis in HIV infected people visiting National Public Health Laboratory (NPHL) for assessing eligibility to highly active anti-retroviral therapy.

\textbf{Methods:} A cross-sectional study was conducted to measure the prevalence of pulmonary tuberculosis. Data on probable risk factors in patients with PTB were compared to patients without PTB, calculating odds ratio as measure of association. Factors showing significant association in univariate analyses were included in stepwise backward logistic regression model to adjust for confounding.

\textbf{Results:} The prevalence of Pulmonary Tuberculosis was 32.4% (95% CI 30.25 to 34.56). In the univariate analysis, patients with PTB were more likely to have a higher age, longer duration since the diagnosis of HIV, diarrhoea, parasitic infection, married lower CD T cell counts, and lower CD4/CD8 ratio. However, the backward stepwise logistic regression revealed that only the CD4 T cell count <200/µL (AOR 11.69, 95% CI 6.23 to 21.94), CD4 T cell count 200-350/µL (AOR 2.52, 95% CI 1.30 to 4.89), diarrhoea (AOR 2.77, 95% CI 1.78 to 4.31), parasitic infection (AOR 3.34, 95% CI 2.02 to 5.50) and ‘sex with partner’ as probable mode of transmission (AOR 0.44, 95% CI 0.20 to 0.93) were independently associated with pulmonary tuberculosis.

\textbf{Conclusion:} A high prevalence of pulmonary tuberculosis was observed. Participants with tuberculosis were significantly more likely to have lower CD4 count, diarrhoea, and parasitic infections. HIV treatment programs should consider these factors for better outcomes.

\textbf{Keywords:} HIV, CD4, pulmonary tuberculosis, diarrhoea and Nepal.

NUTRITIONAL PERCEPTION AND DIETARY PRACTICES AMONG SCHOOL GOING ADOLESCENT GIRLS IN KATHMANDU VALLEY

Supriya Wagle\textsuperscript{1}

\textsuperscript{1}Nobel College, Sinamangal

\textbf{Background:} Nutrition influences growth and development throughout infancy, childhood and adolescence; it is, however, during the period of adolescence that nutrient needs are the greatest. Very little attention has been paid to adolescents so far, and adolescent nutrition has received inadequate attention in research as well as in programming for adolescent health.

\textbf{Objective:} The objective of the study was to find out the Nutritional Perception and Dietary Pattern among school going Adolescent Girls of Kathmandu Valley.

\textbf{Methodology:} A descriptive cross sectional study was conducted among school going Adolescent Girls of Kathmandu valley. The samples were selected by probability proportionate sampling (PPS) method. A total of 310 students from six schools/ colleges were taken as the sample. Self administered questionnaire were used to assess the Nutrition perception and dietary pattern of the adolescents girls. Data entry and analysis was done using Epi-data and SPSS 16.0.
Result: The majority of adolescents seemed to have sound knowledge on nutrition i.e. 87% said they have heard about it. Mothers' knowledge effected adolescents’ knowledge on nutrition, but only 60% of the respondent’s mothers are literate. 83% of the respondents got pocket money from parents. The meaning of nutritious food was recognized as a balanced diet by the majority of girls i.e. 84%. Most of the students stated they got nutrition information from school. Government school students stated their desire to be thin as a major contributing factor for their dietary pattern, whereas advertisement was stated by private school students. 55.4% of the respondents visited restaurants once a week. Almost 92% of the respondents stated nutrition is needed to prevent future nutrition related diseases.

Conclusion: The study also concludes that perception on nutrition shapes the dietary pattern among most of the adolescent girls. Pocket money seems to be an important factor in determining the dietary pattern. Knowledge on daily meals to be taken and its practice is highly significant. School has proved to be a reliable source of information for nutrition. Most of the students think nutritious food is necessary in order to control nutrition related disease in future. Hence, adolescents’ nutrition should be focused in order to improve nutritional status of women in the future. Research related activities on adolescents’ nutrition should be enhanced and nutrition related programmes should be conducted time to time focusing on mothers participation.

IMPROVING MATERNAL AND NEONATAL HEALTH THROUGH PROVEN HEALTH PROMOTION APPROACHES

Nirmala Sharma1, Ram Sharan Pyakurel1, Raj Bhatta Madan1
1CARE Nepal
e-mail: nirmala@np.care.org

Thousands of women still lack access to skilled care during pregnancy, child birth and their babies first month of life in Nepal. It has still high maternal mortality (229 per 100, 000 live births -MMM Survey 2008) & neonatal mortality (33 per 1000 live births-NDHS 2011). Still two-thirds of births (63 percent) take place at home (NDHS 2011). Ministry of Health (MOH) Nepal and CARE Nepal have been implementing some proven health promotion approaches like community health score board (CHSB) and self applied technique for quality health (SATH) through different community focused projects funded by different donors like GSK, USAID and Dabid wich especially in far western part of the country.

One of the main objectives of the CHSB is to make unheard voices heard, increase public awareness, and by doing so generate collective action and bottom-up pressure against poor service delivery. It also provides public health managers an opportunity to track immediate outcomes, take mid-course corrective measures and bring in strategic reorientation. Social accountability mechanism (demand-driven and operate from the bottom-up) and participatory monitoring & evaluation (the monitoring of service delivery by communities) are the fundamentals of CHSB.

SATH is a technique for greater community involvement for primary health care service provided by the state with especial focus on maternal neonatal and child health. It empowers women through regular MG-H meeting and supports mothers through emergency fund making mothers group more accountable for its needy members to prevent unwanted maternal and child health conditions. It increases community ownership towards the resources it have and creates demand from the community people for service provided by state and non-state actors in local level. Gender equity, social inclusion and community participation are the basic fundamentals of SATH.

Both of these approaches consist of individual, group and mass methods of health education to change the behavior of peoples. These approaches when supplemented with CB NCP, CBIMCI, BPP, strengthening birthing centers through equipments, renovation and skilled birth attendant (SBA) training of auxiliary nurse midwives (ANM) (supply side) and regular meeting of mother group for health on priority health matters; interactions with mothers in-law, fathers in-law and husband at community and household level (demand side) can give greater impact.

Six monthly focused group discussions were conducted to assess the status of maternal, neonatal and child health in the form of weighted score for selected indicators. Each weighted score was then converted into percentage. The institutional delivery was found increased from 50 to 70 percent and women getting safe delivery incentive at the time of delivery was found increased from 30 to 100 percent. Similarly, the frequency of MG-H monthly meeting
was found increased from 80-98 percent; budget allocation from VDC on MNH was found increased from 70 to 90 percent. Again, use of modern family planning methods was found increased from 20 to 70 percent; conduction of FCHVs regular monthly meeting was found increased from 50 to 62 percent. Similarly, frequency of monthly HFOMC meeting was found increased from 60 to 76 percent and status of immunization among under 1 year children was found increased from 70 to 90 percent. Finally, Maternal and neonatal death was found reduced from 50 to 100 percent.

Focused interventions at both supply and demand side with greater community involvement are facilitating to improve maternal neonatal and child health services. Building community’s knowledge base and capacity leading to well informed community seeking appropriate health care available at nearby health facility are the key for change.

Key words: CHSB, SATH, CARE Nepal, MoHP Nepal

PEER EDUCATION AS AN APPROACH FOR HEALTH PROMOTION IN HIV PROGRAMS IN FAR WESTERN NEPAL

Nepal Chiranjibi, Pandey Prakash, Pyakurel Ram Sharan

1CARE Nepal

E-mail: chiranjibi@np.care.org

Background: CARE Nepal is working in the sector of HIV and AIDS in Far West Nepal since 2008. The major program approach adopted in HIV and AIDS is peer education and mobilization for behavior change of the migrants, spouses and PLHIVs. During the period from 2008 to 2012 three programs (EMPHASIS, Bharosa and Safe Passage) covered seven districts (Kailali, Kanchanpur, Dadeldhura, Doti, Accham, Bajhang and Bajura). These programs covered a total of 80 VDCs, three municipalities and the major highway within these districts adjoining the Indian border.

Methods: A pool of resource persons (trainers) for peer education is developed through training of trainers. The trained facilitators select peer educators from the same community and the beneficiaries such as migrants, spouses of migrants, and PLHIVs. Then trained social mobilizers, Outreach workers conducted peer education training in the villages where there was program intervention. 1503 peer educators are then mobilized in the community to reach the population with messages on migration and HIV. These peer educators meet quarterly, share the experiences and learning and plan for the next period. These peer educators are supported, mobilized and monitored by the outreach educators/ social mobilizers.

Results: The Peer Educators (PEs) have made 7515 friends for empowering them with the information on HIV. A Total of 110745 people were reached by the PEs and Outreach Workers. Among them 38% were migrants 35% were spouses of migrants. The level of awareness among the migrants and spouses and people going for HIV testing and counseling is found to be increasing, through the mechanism a total of 3038 people are referred for HIV testing and counseling of which 92%(2804) have received VCT and 120(4.2%) of them tested were HIV positive. Upon community interaction, about 51% of wives of migrant workers (n=350) reported that they do discuss on safer sexual practice and HIV & AIDS with their husband at home and/or at their destination through telephone conversation. Health seeking behavior of community people for STI treatment has been increased due to awareness. (e.g. in Dadeldhura a total 337 people received STI services in project VDCs whereas 69 in other non intervention adjacent VDCs.). A total of 916 cases of STI are treated. The number of HIV status disclosure has been increased to 79 in 2010, 99 in 2011 and 30 in 2012.

Conclusion: The peer education approach for behavior change especially in HIV in this region has seen to be an effective approach so it can be scaled up to cover the unreached population and geography to produce a better impact in rest of the population.

Key words: Peer educators, HIV & AIDS, CARE Nepal
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National Conference on Health Promotion

March 30 to April 1, 2013

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