Geneva Health Forum 2020 Poster Book

Edited by
Antoine Flahault, Antoine Geissbuhler, Nicole Rosset

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Poster Book

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The cover image depicts a Malian radiologist training doctors and midwives to mobile and tele-echography in a maternity in Nouakchott, Mauritania.

Cover image courtesy of Antoine Geissbuhler.

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Preface

The Geneva Health Forum is the forum that brings together key actors of Global Health. Created in 2006, and held every two years ever since, it is organized by the Geneva University Hospitals (HUG) and the University of Geneva in partnership with 30 global health organizations.

Building on the dynamic of International Geneva, the Geneva Health Forum is one of the most important international global health conferences.

The overall objective of the Geneva Health Forum is to contribute to the improvement of health and access to health care in the world. To achieve this goal, it aims to give visibility to innovative field experiences and to establish a critical and constructive dialogue between global health actors from different sectors, as well as to foster collaborations between them.

At each edition, the Geneva Health Forum gives an important place to the presentation of research projects. Research, whether carried out by students or established researchers, contributes to innovation and new practices in access to care.

The synthesis of research results in the form of a poster remains a quality exercise. Electronic dissemination offers new opportunities to meet a wider audience.

Favoring a multidisciplinary approach, the GHF is open to all professions working in the health field.

From 16 to 18 November 2020, the eighth edition of the Geneva Health Forum, which took place in the difficult context of the Covid 19 pandemic, hosted 165 posters. The present collection offers through 65 posters a wide range of topics discussed.

We look forward to seeing you at the next edition of the GHF, which will take place from 3 to 5 May 2022.

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ASSESSING OPPORTUNITIES FOR SAFE RADICAL CURE OF *PLASMODIUM VIVAX* MALARIA IN INDIA

Authors

E. Gerth-Guyette, A. Sharma, M. Kalnoky, E. Spark-DePass, S. Halstead, G. Domingo, R. Tandon and N. Agarwal

Introduction

India bears nearly half the global burden of *Plasmodium (P.) vivax* malaria. The majority of these cases are concentrated in poor states and in rural areas, where at-risk populations often seek care in the private sector. The safe radical cure of *P. vivax* malaria requires greater access to testing for glucose-6-phosphate dehydrogenase (G6PD) deficiency. Diagnostics that can identify people with low levels of G6PD activity should be used before treatment with primaquine.

Aims and methods

The goal of this project was to understand the opportunities and challenges to expanding access to safe radical cure for *P. vivax* malaria management in India using the following approach:

1) Use case identification

Nine districts across four states were selected to include a range of malaria elimination contexts, both urban and rural populations, and the use of both public and private health facilities.

State	Elimination category	*P. vivax* cases	Use case
Punjab	1	796	Urban Public Sector Rural Public Sector
Gujarat	2	34,299	Urban Public Sector Rural Public Sector Urban Private Sector
Uttar Pradesh	2	32,186	Rural Public Sector Rural Private Sector
Jharkhand	3	50,723	Rural Public Sector Rural Private Sector

2) Primary research

Interviews and focus group discussions were conducted with 110 key informants across the use cases between August and November 2018 to better understand malaria case management and current G6PD testing practices and perceptions.

2) Primary research

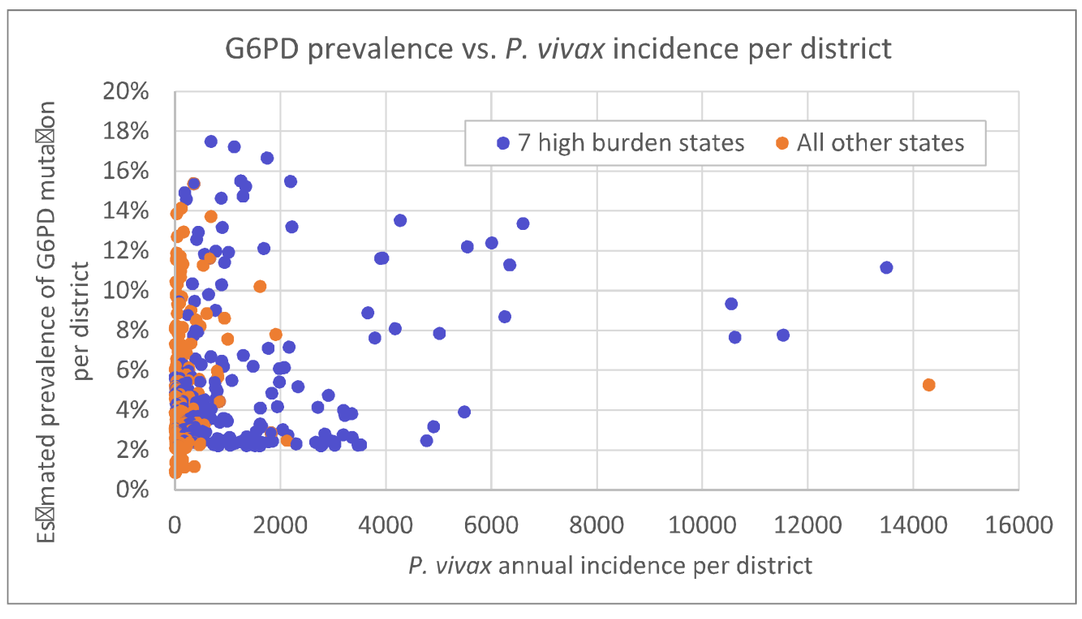
Demographic and geospatial raster data were combined to generate district-level maps of India that enabled the visual exploratory analysis of demographic and epidemiologic data. Geospatial data were used in conjunction with geocoded health care infrastructure data to create proxies for access to care in seven high-burden districts. Access was defined by a surface travel speed map, which was used to estimate the time it takes to traverse any two geographic points. Data were analyzed within the statistical programming language R.

Results: Malaria case management and G6PD testing practices and perceptions

- Most patients first seek care in the private sector, due to easier accessibility, perceived higher quality of care, and the familiarity of private providers with local customs and norms.
- Public providers reported high levels of adherence to national treatment guidelines, whereas private providers reported significant deviations.
- Primaquine is widely used throughout the public sector, but there is wide variation in providers' perceptions of the effectiveness.
- G6PD testing is only available in a minority of private-sector health facilities.
- Patients pay out of pocket or through private insurance for G6PD testing at private laboratories.
- There is no consensus among policymakers and clinicians on the extent or severity of G6PD deficiency. Many key informants said that they believe G6PD deficiency is rare or does not pose a significant risk.
- Among frontline health workers, there are low levels of knowledge and limited understanding of hemolytic anemia and its linkages to G6PD deficiency.

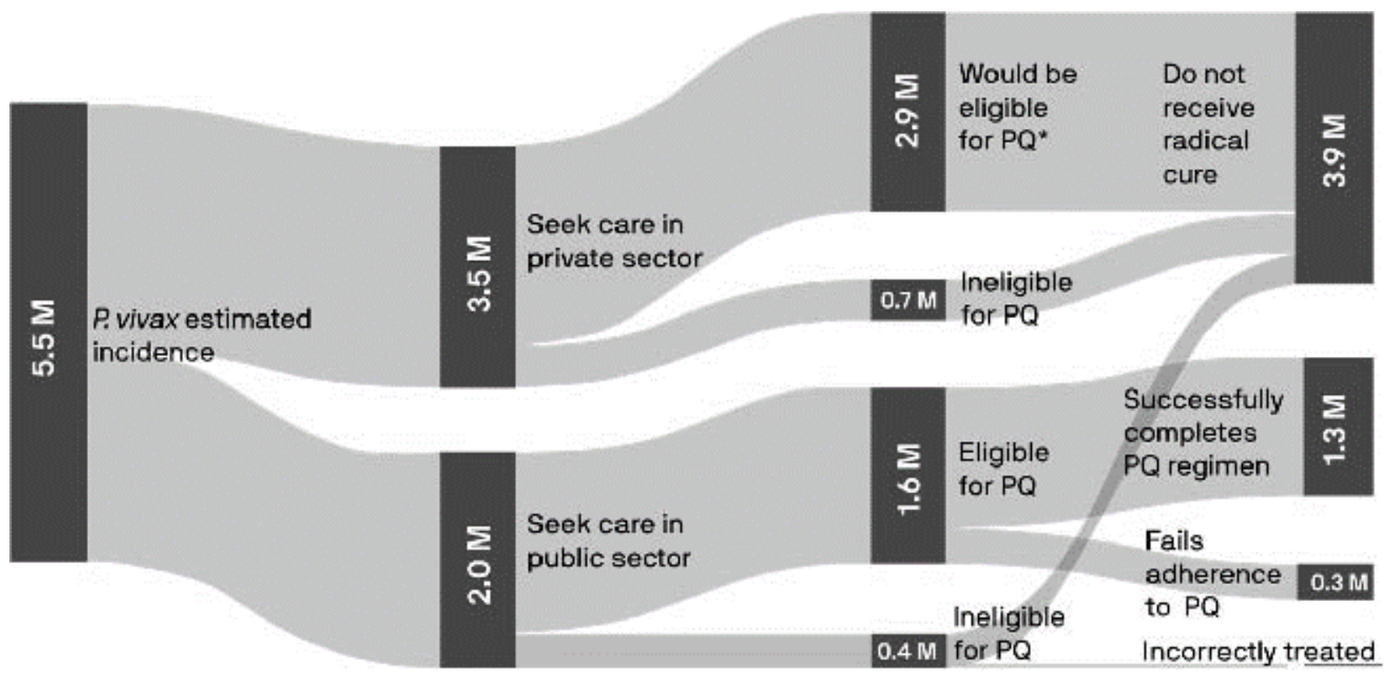
Results: Geospatial modeling, an overlapping burden of *P. vivax* and G6PD deficiency

G6PD deficiency poses a challenge to several high burden *P. vivax* states, as places with a high incidence of *P. vivax* malaria overlap with a significant prevalence of G6PD deficiency.



Sources: G6PD deficiency prevalence, Malaria Atlas Project; vivax incidence, 2017 Malaria Atlas Project, 2017 estimated cases data, Epidemiology of Plasmodium vivax in India, PATH geospatial modeling.
Abbreviations: G6PD, glucose-6-phosphate dehydrogenase.

Results: Estimating access to best clinical practices for *P. vivax* patients



Abbreviations: M, million; PQ, primaquine.
Source: PATH Geospatial modeling, estimated incidence: Malaria Atlas Project 2017 estimated incidence
**Primary research indicated that although PQ is givdosingen in the private sector, very few private providers are administering PQ in compliance with national treatment guidelines (e.g., administered as a cocktail or with incorrect).*

- 3.9 M patients (71%) are not expected to receive radical cure.
- 1.3 M patients (24%) are expected to receive and successfully complete radical cure treatment.
- 0.3 M (6%) are expected to receive but not successfully complete radical cure treatment.

Results

- While policymaker and provider perspectives are mixed, epidemiological data suggest that the overlapping burden of *P. vivax* incidence and G6PD deficiency pose a significant risk for safe radical cure in India.
- Despite the reported use of primaquine, model estimates suggest that the appropriate use of radical cure remains significantly underutilized as a tool for *P. vivax* control and elimination in India.

PATH gratefully acknowledges GSK for their financial support of this research.

COMMENTS AFTER VIOLENCE AGAINST FAMILY PHYSICIAN IN TURKEY

Authors

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Introduction

Violence is defined by the World Health Organization as “the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation”. In Turkey, violence against health care workers has been increased significantly in recent years. In this study, it is aimed to examine the comments written about violence against family physician via internet journalism and thus to get an idea about common attitudes.

Methods

In this semi-quantitative study, the readers’ comments for the news about the family physician who exposed to physical violence by 10 people have been examined. The comments were evaluated in three categories such as “anti-violence,” “supporting violence”, and “undecided” by two researchers independently, at the same time, they were divided into four subject categories according to the topics mentioned: “commenting directly on the incident”, “post-incident judicial process”, “sociocultural status of the perpetrators,” and ”health care defect”. Both researchers' evaluations were found to be completely compatible with each other.

	Anti-Violence	Supporting Violence	Undecided
Commenting directly on the incident	7,8%	17,0%	12,5%
Post-incident judicial process	39,5%	1,9%	29,2%
Sociocultural status of the perpetrators	41,1%	1,9%	29,2%
Health care defect	11,6%	79,2%	29,2%
Total	62,6%	25,7%	11,7%

Table 1. Relationship comments category and topics.

Conclusion

We can conclude that all violence supporters were blaming the victim, who was the family physician in this case. The inadequate criminal sanctions imposed on violent people against healthcare workers may facilitate the use of violence as a means of seeking rights. The introduction of dissuasive penalties, together with public training to develop a condemnation of violence, may provide a solution to this problem.

Results

There were 206 news reviews and all have been examined. It is assumed that each comment is made by a separate person. Of the reviewers, 62.6% (n = 129) were anti-violent, 25.7% (n = 53) supported violence and 11.7% (n = 24) were undecided. In terms of subject categories; commenting directly on the incident was 10,7% (n=22), post-event judicial process was 28,6% (n=59), sociocultural status of the perpetrators was 29,6% (n=61), and health care defect was 31,1% (n=64). While 79.2% of the supporting violencers were commenting on the health care defect, 41.1% of the anti-violencers commented on the sociocultural status of the perpetrators and 39.5% of post- incident judicial process ($p < 0.001$).

Acknowledgment

Thanks to our mentor, Professor Selma Karabey, who guided us in every step of this study.

Contact: bekiraktura@gmail.com

CLINICALLY RELEVANT ANTIBIOTIC RESISTANT PATHOGENS FROM HOSPITAL EFFLUENT AND THEIR ACCUMULATION IN VEGETABLE FRESH PRODUCE UNDER TROPICAL CONDITIONS

Authors

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Background

Hospital and urban wastewaters are a major cause of the spread of pathogens and antibiotic resistance. The study site, Kinshasa, DRC, has a history of outbreaks related to foodborne and waterborne pathogens. We investigated the significance of proliferation of antibiotic resistant and fecal indicators from hospital effluent. Then, we sampled vegetable produce (lettuce and celery) and irrigation water from surrounding farms. We quantified the biological risk of infection associated with the consumption of vegetables.

I. Objectives

- Investigate the effects of hospital effluent on the proliferation of antibiotic resistance
- Investigate the impact of irrigation water with a compromised quality
- Quantify pathogens in food produce (*Vibrio cholerae, and* MRSA)
- Perform a quantitative microbial risk assessment (QMRA) for relevant pathogens
- Perform antibiotic resistance tests on pathogenic isolates.

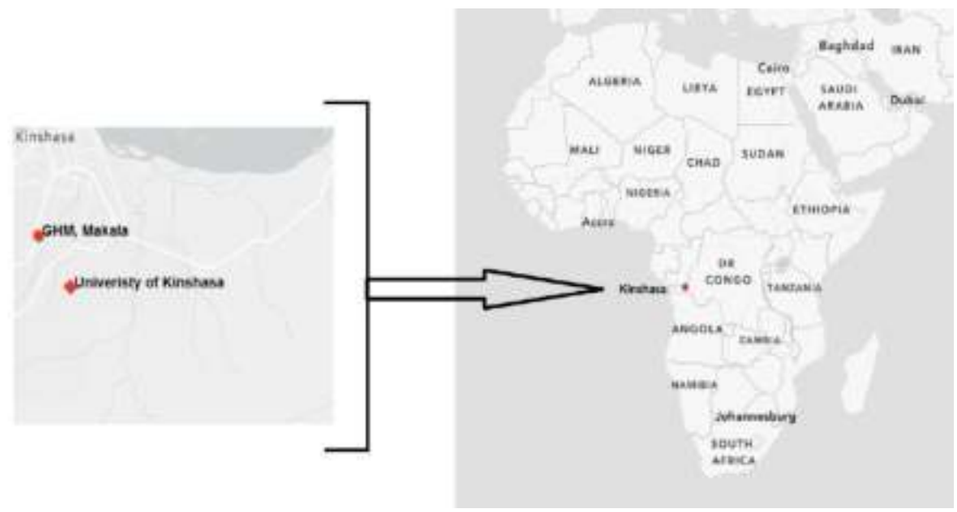

Figure 1. Sampling Sites.

II. Methodology

We sampled two river systems receiving hospital wastewaters over two seasons and irrigation and vegetable produce (lettuce and celery) from three farms.

Extraction of bacteria from:
- **Water** (membrane filteration)
- **Sediments** (horizontal adgetation in saline buffer, breif centrifugation then membrane filteration)
- **Vegetable** (blending, dilution, then inoculation)

QMRA
- *Vibrio cholerae, and* MRSA
- Exposure handbook US EPA
- Dose Response Models
  - Exponential
  - Beta-Poisson
- Antibiotic resistance test (disk diffusion)

Quantification of bacteria:
- Enterobacteria, *E. coli*, Coliforms
- Blactam and carbapenem Resistance

Quantification of markers and ARGs (qPCR)
- Relevant bacteria
- ARGs: bla_{OXA-48}, bla_{CTX-M}, bla_{IMP}, bla_{TEM}

III. Results A: Proliferation of antibiotic resistance

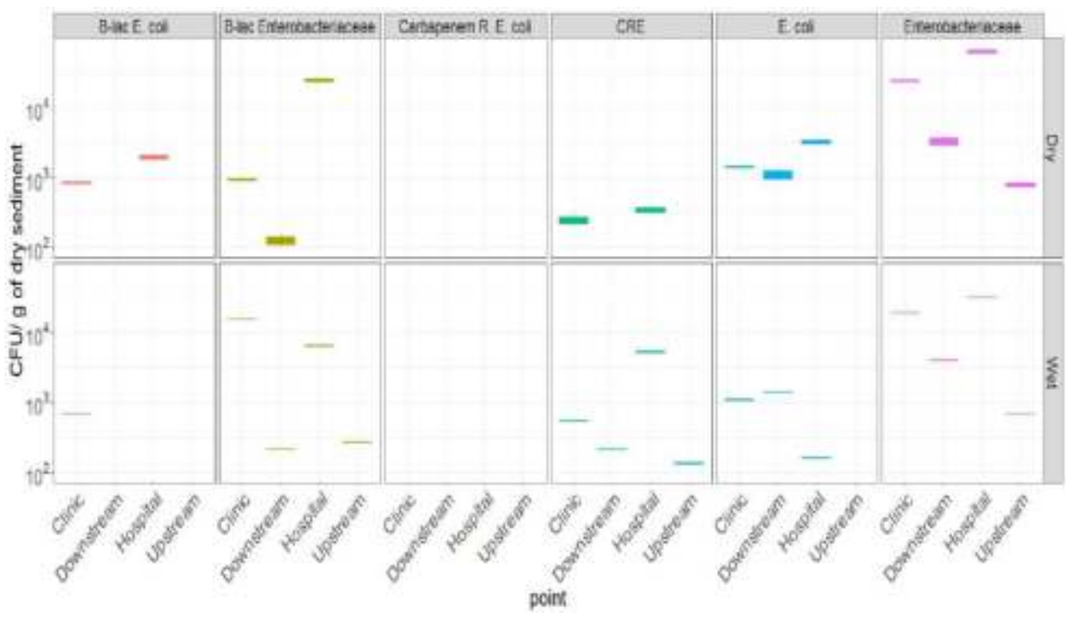

Figure 2. The abundances of cultivable E. coli, Enterobacteriaceae, β-lactam resistant E. coli (B-lac E. coli) and Enterobacteriaceae (B-lac Enterobacteriaceae), and carbapenem resistant E. coli (Carbapenem R. E. coli)and Enterobacteriaceae (CRE) per gram of dry sediment in the wet and dry seasons.

Table 1. The significance of the hospital contribution in relation to the upstream. If the p value is above 0.05, there is no significant difference between the upstream and the hospital discharge. If it is below 0.05, there is a significant difference.

Season	Type of matrix	Parameter	P value (ANOVA)
Wet	Water	*E. coli* and Enterobacteriaceae	0.23
		Total and ARB	
	Sediment	*E. coli* and Enterobacteriaceae	2.8×10^{-8}
		Total and ARB	
		Molecular bacterial markers (Normalized)	1.6×10^{-2}
		(*E. coli, Enterococcus* and *Pseudomonas*)	
		ARGs (Normalized)	2.2×10^{-8}
Dry	Water	*E. coli* and Enterobacteriaceae	2.6×10^{-4}
		Total and ARB	
	Sediment	*E. coli* and Enterobacteriaceae	1.4×10^{-5}
		Total and ARB	
		Molecular bacterial markers (Normalized)	1.9×10^{-2}
		(*E. coli, Enterococcus and Pseudomonas*)	
		ARGs (Normalized)	7.4×10^{-5}

III. Results B: QMRA

Vegetable	*V. cholerae*	MRSA
Lettuce Farm 1	0.909	0.033
Celery Farm 1	0.762	0.001
lettuce Farm 2	0.891	0.019
Celery Farm 3	0.779	0.003

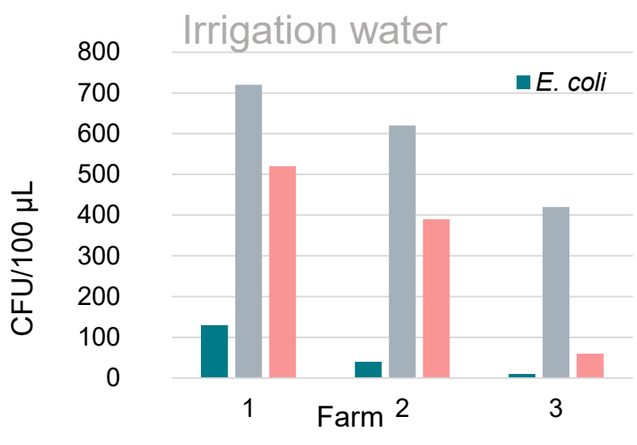

Figure 3. The biological quality of irrigation water.

Table 2. Risk of infection with pathogens from vegetables.

The QMRA was performed according to the guidelines of the Exposure Handbook by US EPA. Briefly, the guidelines included the frequency of salad consumption and percentage of vegetable in salads

Antibiotic Resistance Test

Isolates of *V. cholerae* and MRSA were subjected to 16 and 9 antibiotics, respectively. The susceptibility test was performed using the disk diffusion method. These antibiotic belong to different classes. All the *V. cholerae* isolates were resistant to at least 3 antibiotics from three different classes. The MRSA isolates were at least resistant to one antibiotic.

Hospital effluent causes significant pollution of antibiotic resistance genes and fecal bacteria in the sediments in both seasons and water in the dry season ($p<0.05$). However, the effluent does not significantly pollute river water in the wet season ($p>0.05$).

IV. Conclusion

In developing countries, untreated wastewaters cause wide spread of antibiotic resistance in the form of bacteria and genes. These untreated wastewaters lead to quality degradation of waterbodies. When compromised water is used for irrigation, the consequences can be catastrophic. In this study, we demonstrated the high infection rate caused by the consupmtion of raw vegetables in salads and the high frequency of antibiotic resistance among isolates. We suggest the termination of the use of compromised irrigation water and switch to a water that complies with WHO standards for irrigation water. We also recommend the reduction of the total number of bacteria, which can be achieved by washing the produce, allowing enough time to pass between last irrigation and harvest, and switch of irrigation method from overhead spray, which is quite common to drip irrigation.

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HEALTH SYSTEM FACTORS INFLUENCING ACCESS AND UTILIZATION OF SEXUAL AND REPRODUCTIVE HEALTH SERVICES IN CONFLICT SETTINGS: YEMEN

Authors

Haifaa H.M. Al Wajeah[1]
[1]MD MPH

Introduction

Yemen is in an unstable situation since decades with different social characters which affect the sexual and reproductive health outcomes. This has deteriorated, since the current conflict resulting results in a fragile health system.The maternal mortality ratio in Yemen is considered one of the highest ratios globally with low utilization due to poor access. The study aims to analyse the health system factors that affect access and utilization of the sexual and reproductive health services during a conflict setting in Yemen.

Methods

This study is based on a review of grey literature, peer-reviewed reports, published articles, international and national reports of the three core functions of the health system and the effect of conflict on these functions. In addition, to we feature a simple qualitative analysis of the Health Resource Availability Mapping System (HeRAMS) 2016 data of 16 governorates in Yemen out of 22. The study was guided and analysed by using WHO/WB model for Health System Strengthening, *Figure 1.*

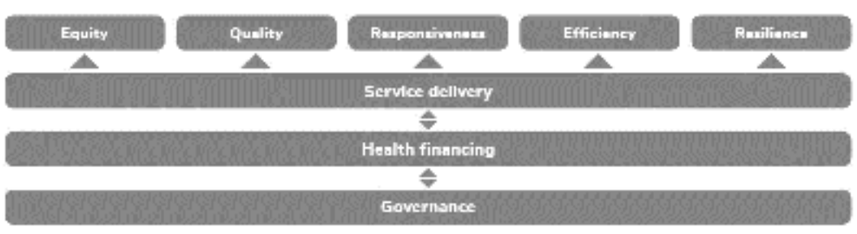


Figure 1. WHO/WB model for HSS (HSS towards UHC); Source: Healthy systems for Universal Health Coverage – a joint vision for healthy lives, 2017.

Results

Utilization and access of SRH services in Yemen is affected by different factors and one of the most important factors is the health system functioning which facilitates or creates difficulties for the population to access SRH services.

Governance: The findings highlighted that weak governance is characterized by absent or weak oversight which deteriorated since the conflict started. That weakness resulted in increased corruption and ineffective management of the health sector in the presence of two MoPHP with lack of coordination. In 2017, Yemen had a percentile between 0%-6% of the good governance indicators and became one of the weak countries worldwide, Figure 2.

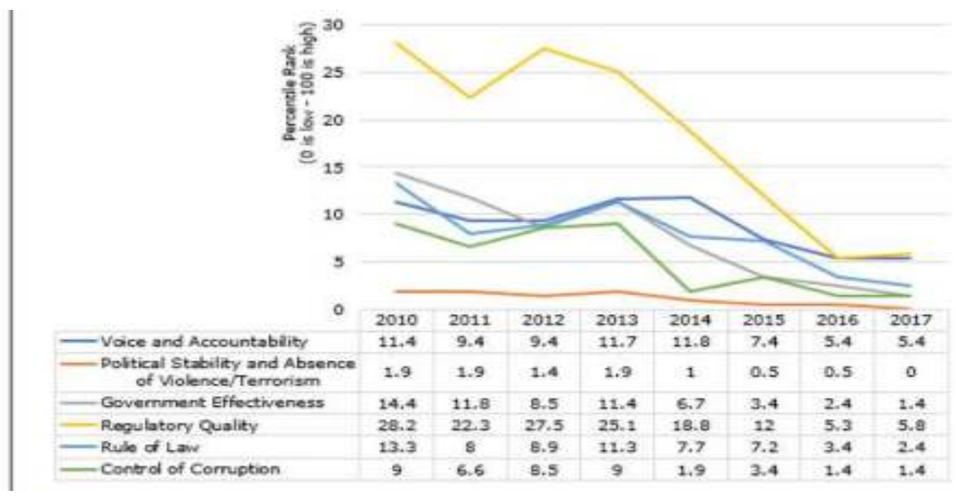


Figure 2. Percentile Rank of Yemen in Good Governance Indicators.
Source: Author's summary based on MoPIC. Yemen Socio-Economic Update, 2019.

Health Financing: There is a collapsed economy which will increase the dependency on external donors due to low governmental contribution to the health sector especially to SRH services. This decrease the sustainability of providing health projects, increase out of Pocket with limited coverage of insurance scheme, Figure 3. In addition, the inability of MoPHP to ensure the provision of health services, i.e. MoPHP has challenges to pay health staff's salaries and implement the policy of free of charge PHC services.
An inadequate access and low utilization due to financial challenges affect the SRH service delivery which deteriorated during the current crisis in Yemen.

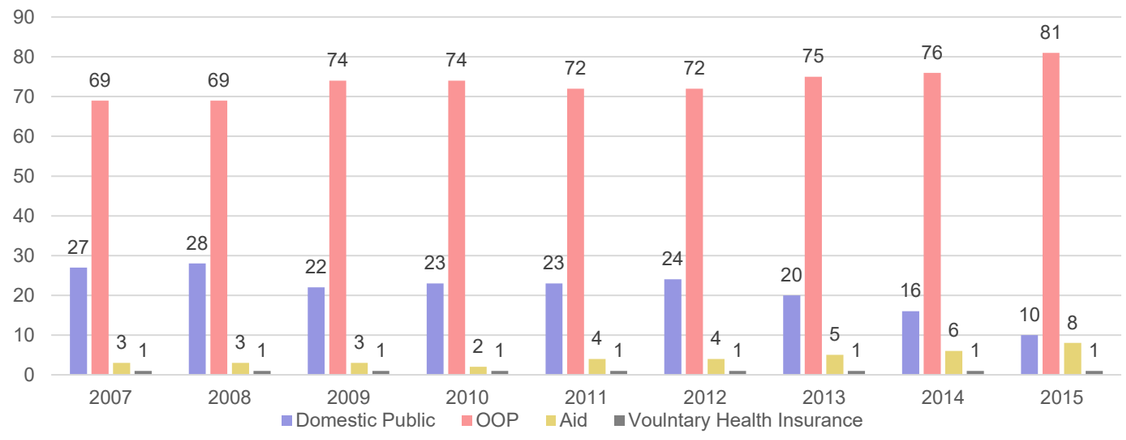
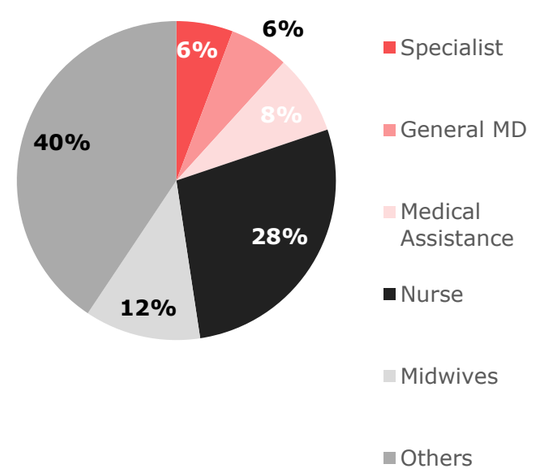


Figure 3. Percentage of THE between 2007-2015 by Revenue Source.
Source: WHO, National Health Account Database, 2016, http://apps.who.int/nha/database/country_profile/Index/en.

Service Delivery: Based on Yemen Humanitarian Needs Overview 2019 which reported by UNOCHA who mentioned that reproductive health services are limited to less than 55% in each level of health facilities. WHO minimum average standard of health providers is 22 providers per 10,000 population. 000
In HeRAMS 2016, there are 33,317 health care providers in the 16 governorates where the survey was done. However, the national average is 17.03 per 10,000 population which is below the international standard for the health workforce with low presence of midwives and speciality as Figure 4.

Figure 4. Percentage of Availability of Health workforce by professional background. Source: Yemen HeRAMS, 2016.



Challenges related to the conflict which cause a shortage in health providers, infrastructure and medical supplies causing poor quality life-threatening services' provision for mothers and newborn. While prior to the conflict and based on the Yemeni National Health Demographic Survey 2013, the coverage of maternal health services was like 60% ANC and 45% deliveries attended by skilled providers and there is a maldistributed of services which is similar to other MENA countries. However, Yemen has the lowest coverage of less than 10% based on USAID reports 2018.

The SRH services in Yemen were limited before the conflict and deteriorated during the current conflict which will decrease the utilization of services leading to increase the burden of disease and part of it maternal and newborn related diseases. This is a result of many factors of related to the service delivery; For example:

- The presence of poor quality of services which leads to loss of trust between the population and the health sector.
- Shortage of supplies, staff and equipment with lack of electricity and fuel to run the health facilities which lack access to health services.
- Low coverage of rural health facilities due to maldistribution, poor referral system, shortage of reproductive health commodities, poor maintenance of equipment, decreases the quality of services leading to low utilization as the MoPHP cannot meet its commitment to the community.

Regarding the supply point, based on HeRAMS 2016 data, there was a high availability of outpatient services with availability of all essential drugs in Al Dalae's hospitals with 80% availability. Though, the lowest percentage was in hospitals of Aden, Al Jawf, Al-Hodeidah and Lahaj with 20% and less. For health centres, it was less than 10% in Abyan, Marib, Sana'a, and Amran. And for the health units, it showed that in 15 governorates the availability of services was less than 20% except in Al-Hodeidah where it was 48%, *Table.1.*

No	Gov.	First Aid and Life support (a)			Outpatient services with availability of all essential drugs (b)		
		Health Unit	Health Centre	Hospital	Health Unit	Health Centre	Hospital
1.	Sana'a Capital City	n/a	31	n/a	n/a	36	n/a
2.	Al Jawf	0	33	33	0	17	17
3.	Hajah	36	47	90	14	28	56
4.	Al-Hodeidah	6	12	46	48	38	10
5.	Aden	n/a	41	60	n/a	41	20
6.	Sa'adah	28	38	67	11	33	67
7.	Ibb	25	40	85	3	17	54
8.	Sana'a	4	32	86	11	7	57
9.	Al Dhalae	15	37	100	11	27	80
10.	Taiz	27	44	60	18	53	74
11.	Al Baydha	25	37	57	2	11	67
12.	Amran	29	42	60	1	6	33
13.	Abyan	32	28	63	3	8	25
14.	Lahaj	17	40	46	7	38	20
15.	Shabwa	54	65	93	13	72	60
16.	Marib	27	27	78	8	9	56

(a) As a kit
(b) Single commodities

Table. 1. Percentage of Available selected services per HFs and per governorate.
Source: Author's summary based on Yemen HeRAMS 2016.

Conclusion

The study found that lack of access and poor utilization of SRH services in Yemen is affected by the current fragile health system which was known to be fragmented already before the conflict, and worsened because of the current conflict. That collapse occurred by a deterioration of health system functioning especially characterised by low oversight and poor accountability, inadequate budget and low provision of services like SRH services. These factors resulted in poor SRH outcomes in Yemen with poor health system performance and lack of government commitments to implement the current policies largely because of the important shortage of critical resources, i.e. health workers, drugs and medical supplies. etc. In addition, the social and economic collapse increased the poverty rate and decreased SRH services utilization putting Yemen with countries with the highest MMR globally. There is a need to strengthen the health system to improve women health which will improve the health outcomes in Yemen.

Acknowledgments

Royal Tropical Institute (KIT), Amsterdam – Netherlands.

PROMOTION OF FAMILY MEDICINE AT UNDERGRADUATE LEVEL

Authors

Nursuluu Amatova, Nuraiym Turanova, Shirin Talapbek kyzy,
Louis Loutan, Damira Mambetalieva and Nurlan Brimkulov

Introduction

Due to the low image of family medicine in Kyrgyzstan, lack of scientific discipline and low salary, almost no student has previously chosen residency in family medicine. However, a couple years ago, This situation changed due to an initiative of the Ministry of Health and support of medical institutions within the framework of Medical Education Reforms Project.

In addition, the family medicine club was established for students, where they are can discuss some clinical cases in outpatient practice and conduct researche at PHC.

Finally, for the first time in 2019, the inter-university Olympiad in family medicine was organized, and in the same year, students could take part in the fourth congress of family doctors of Kazakhstan.

Basic teaching methods

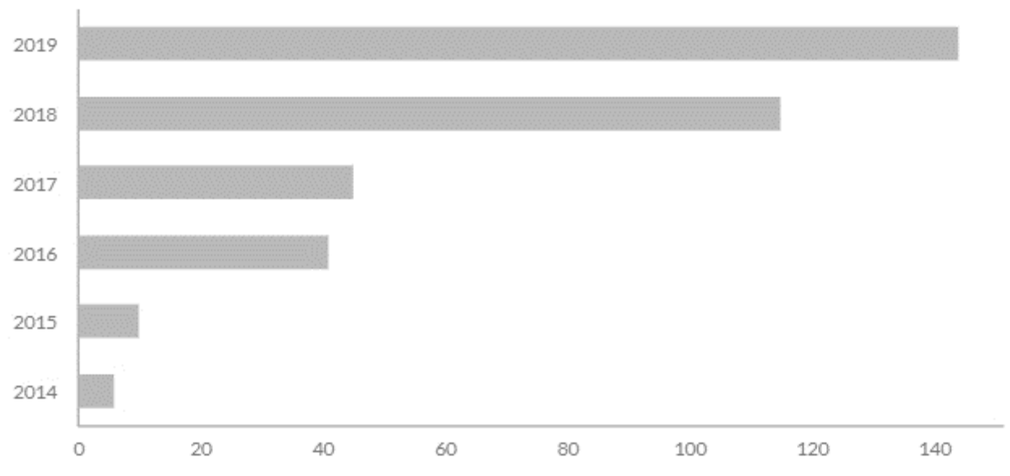
Teaching is carried out on the basis of large centers of family medicine, at the ambulance station in the form of field duty and seminars, and at meetings for the medical and social assessment. Classes are conducted by experienced teachers, while 1/3 of the time is theoretical training and 2/3 is the practical management of patients at outpatient appointments, home patronage, ambulance duty.

Family medicine in Kyrgyzstan

Promoting actions at undergraduate levels

- Revision of the curriculum.
- The main principles of family medicine were introduced in the first year of study.
- In the sixth year of study, the family medicine course extended up to 3 weeks.
- Additional hours of self-study were implemented in palliative care, gerontology, differential diagnosis of skin diseases at the primary care, etc.
- Promotional videos were created about young family doctors and residents who shared their experiences.
- Information leaflets were distributed among students with the explanation of the core role of family doctor in the health care system.

The number of graduates of family medicine



As a result of measures taken in recent years in the field of health care, the promotion of family medicine in the country, an increase in the prestige of the specialty in the eyes of students, there is a positive trend.

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NEW COMPETENCES OF UKRAINIAN HEALTH CARE MANAGERS: HOW TO ADDRESS THE EXPECTATIONS

An Online Survey Results

Authors

Tetiana Stepurko, Valentyna Anufriyeva, Wim Groot,
Axel Hoffmann and Martin Raab

New system–new competenses for health care managers

Since 2014, the Ukrainian health care system has been transformed: key policies and organizations have been adopted and launched to assure universal health coverage. Health care facilities are becoming autonomous and the primary health care providers are financed based on capitation.

All these changes require substantially new qualities of health care managers.

We aim to reveal the self-perceived need in knowledge and skills of health care managers, as well as to outline the available experience for the development of educational products.

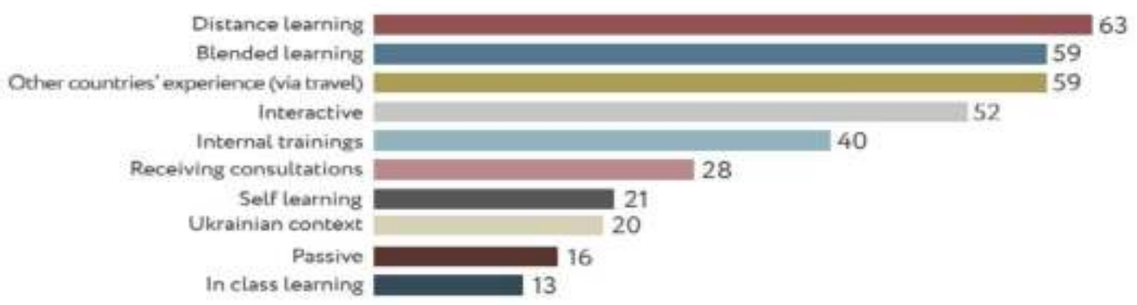

Figure 1. Most used sources for self-education.

Methods

Online survey has been conducted in April–May 2019, based on the contact list of the National Health Service of Ukraine and international projects. Overall, we have received 354 responses.

Moreover, the individual semi-structures interviews and group discussions took place with 35 key stakeholders.

Results

The key findings show that primary care managers demonstrate interest to innovative modes of education: 37% managers participated in webinars and the most rated forms of education are distance learning (63%), blended learning (59%).

Still, 11% has not been involved in any kind of educational activity and about 10% have not any experience in self-education.

The most lacking knowledge is finance and accounting, customer service, computers, the English language and the lack of skills is in systems evaluation, monitoring operations analysis, management of material resources.

These results have been discussed by the representatives of the key stakeholders.

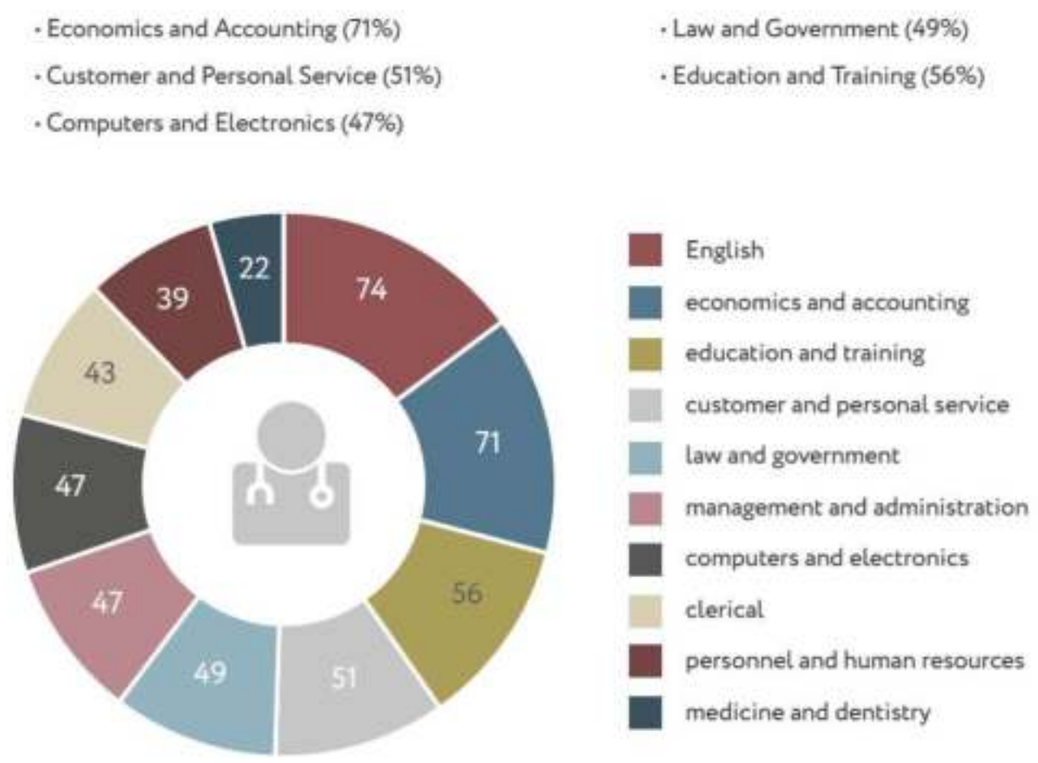

Figure 2. Medical managers report the lack of of the following knowledge the most.

Figure 3. Medical managers report the lack of of the following knowledge the most.

Closing remarks

We observe a high interest of various stakeholders to the new and sustainable programs on health care management. One of the reasons for this demand is rapid transformation of the health care system in Ukraine in 2018–2019. Indeed, policy makers are interested in medical managers who have competences to run autonomous health care facilities. This would ensure the accessibility, quality, and efficiency of health care services. In parallel to this, health care managers feel the need to develop their growth, in general, and managerial skills, in particular.

Health care managers advanced in their career but do not have enough preparation for being managers under the new system, and are not comfortable with classroom education, and want to bring their new knowledge into practice immediately. In this case, the focus on competence-based education and innovative didactics is more important than theoretical teaching.

The needs of health care managers are of high importance when new educational program is launched. Good managerial practices are important for the successful implementation of new policies.

“We want more practice, more successful cases, more information on legislation under the conditions of health care system transformation.”

“The cources should be conducted using more modern methods of teaching (case study, etc.)”

“We want them (the courses) to be more responsive to innovations, to be introduced into practice while fulfilling health care reform requirements in health care facility.”

Quotations of survey participants.

This presentation is prepared within the Ukrainian-Swiss project “Medical Education Development” that is executed in Ukraine by Swiss Tropical and Public Health Institute (Swiss TPH) funded by the Swiss Agency for Development and Cooperation.

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PRIMARY HEALTH CARE REFORM IN UKRAINE: FINANCES AND ORGANIZATION

Authors

Pavlo Kovtoniuk, Nataliia Riabtseva, Tetiana Stepurko and Martin Raab

Introduction

Since 2013 Ukraine and its health care system have been experiencing systematic changes. Legislation on new financing mechanisms and state medical guarantees was adopted in 2017. National Health Service of Ukraine (NHSU) was established in April 2018 as single national payer. It was decided to start the health financing reform from the primary level despite the ignorance of key stakeholders (e.g., patients, government) of primary health care. We aim to outline the process of change and achievements of primary health care transformation for better access and quality of the services.

Methods

The case study methodology has been applied, including "Health index. Ukraine" survey data, "Family medicine perception in Ukraine", the National Health Service of Ukraine information system as well as individual and groups interviews with patients, medical students and educators, health care managers, policy-makers and other professionals.

Figure 1. Example of the communication campaign developed by the Ministry of Health, 2018 to promote new practice of patients' choice of family doctors and declaration signing.

Closing remarks

It is the first system-wide change that Ukraine has experienced since its independence (or within 26 years) and the transformation is positively perceived by both users and providers. Further developments of primary health care are needed, including improving the competences of family doctors, considering more efficient task distribution among the nurses and medical doctors as well as measures to assure quality on primary health care and its connection with specialized and inpatient care.

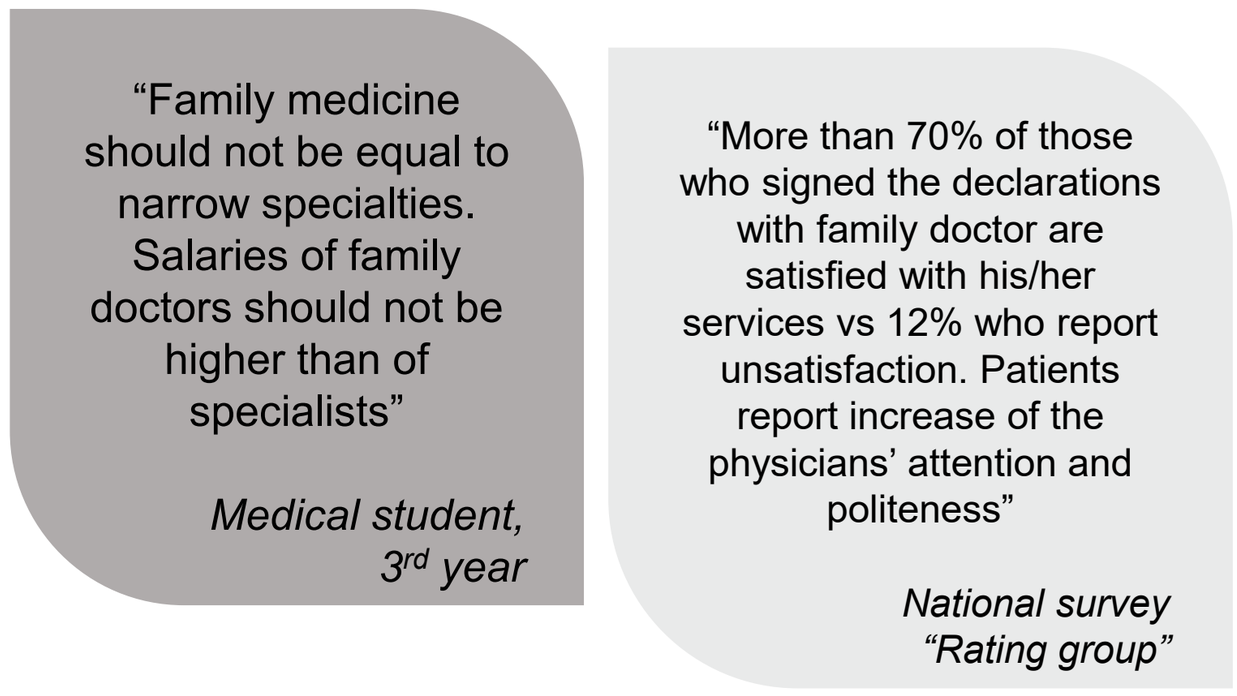

Figure 2. Distribution of the responses on the question "Based on what considerations, have you chosen/planned to choose family doctor" / Health index.Ukraine, 2018.

Results

Primary health care reform has provided the possibility to **patients to choose family doctors** according to patients' preferences and expectations. Since 2018, 28 out of 43 million have signed the declaration with a family doctor, or pediatrician, i.e. they selected their preferred provider. The **declaration** has been an "entry ticket" to the free-of-charge health care services at almost any point and to the medicines reimbursement program (e.g., affordable medicines reimbursement program). The registration-based principle in getting health care services was abolished when new principles were approved. The tax-based system remained the same as the revenue collection in health care.

Facilities have become **autonomous** in 2018 and they are financed based on simple capitation (with age coefficient) as the first step of changes after the line-item budgets.

Both publicly and privately owned entities, both individuals and organizations, can be primary health care providers and are eligible to sign the contract with NHSU. Moreover, a new financing model stimulated the development of new private practices (mostly individual private practices), as it gave professional and financial independence to physicians. Importantly, it has been the first time in the history of Ukraine when the privately owned entities received funds from the state budget for the services provided to people. At the moment, the share of the contracts with private providers is ¼ of the NHSU contracts with primary health care providers. The growth of the privately owned share of the primary health care providers suggests the interest of this scheme and the support from the patients (as they receive the attributes of care which they are looking for).

Primary health care providers with autonomy and capitation payments obtained an opportunity to increase their salaries and to prioritize the investments in the quality of the service. However, as is presented in Figure 2 and Figure 3, medical educators and future health care providers do not consider family medicine as a profession which is appreciated by society.

The majority of the health care users are satisfied with the changes and among the reasons is that they can reach their provider by various means of communication, e.g. telephone, messenger etc. The team of the MoH and NHSU have assured wide-scale communication and good governance of change. The providers are reporting on higher income and opportunities for development.

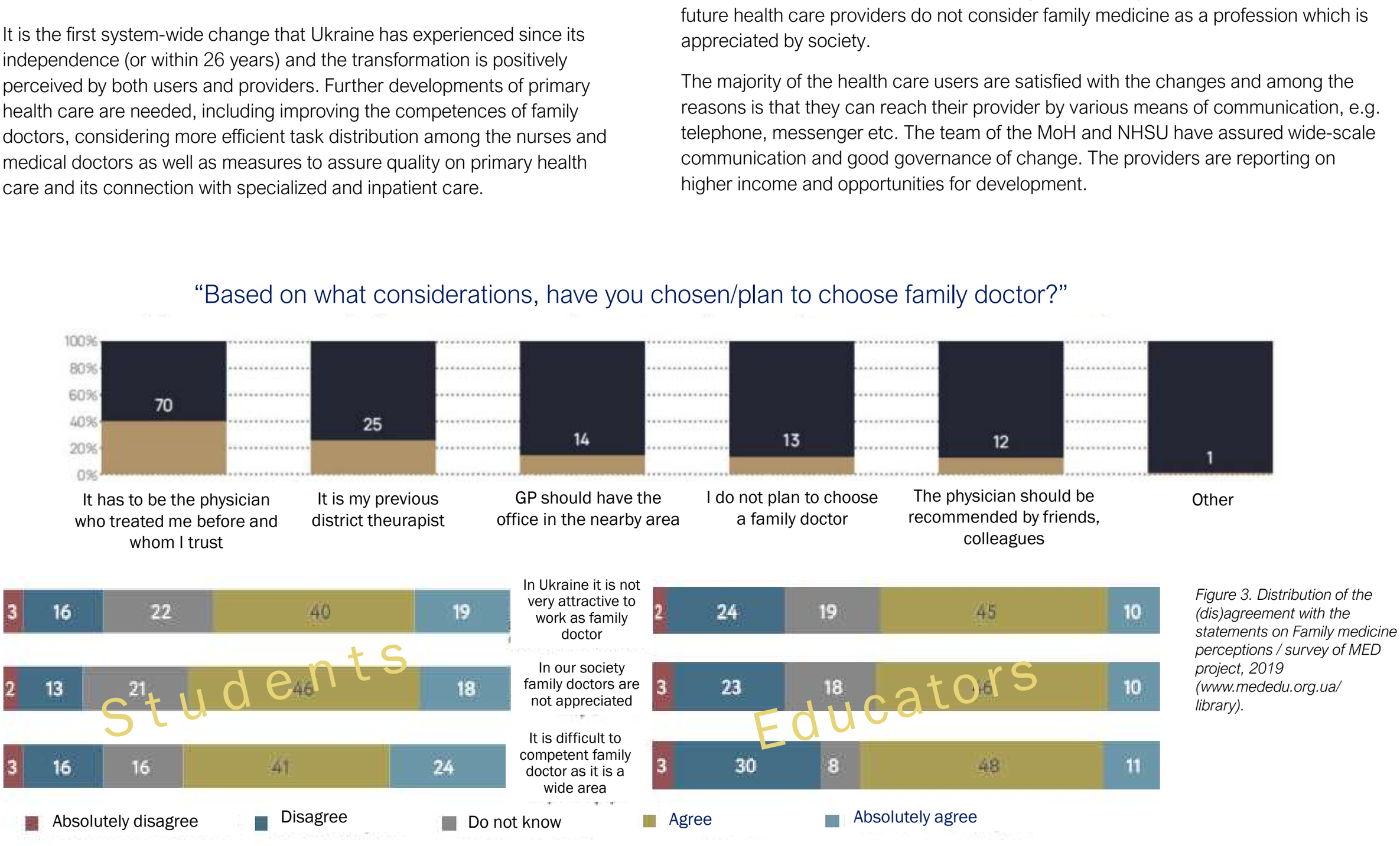

Figure 3. Distribution of the (dis)agreement with the statements on Family medicine perceptions / survey of MED project, 2019 (www.mededu.org.ua/library).

This presentation is prepared within the Ukrainian-Swiss project "Medical Education Development" that is executed in Ukraine by Swiss Tropical and Public Health Institute (Swiss TPH) funded by the Swiss Agency for Development and Cooperation.

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MEDICAL EDUCATION DEVELOPMENT
UKRAINIAN-SWISS PROJECT

ANALYSIS OF FACTORS INFLUENCING EMERGENCE AND SPREAD OF ANTIBIOTIC RESISTANCE IN EGYPT USING A ONE HEALTH APPROACH

Author

Mai Arafa

Introduction

Antibiotic resistance (ABR) is a massive threat to public health and leads to the loss of thousands of human lives each year. This study aims to identify the main contributing factors to the emergence and spread of antibiotic resistance in Egypt. A one health model was followed to develop useful recommendations for effective interventions to tackle the problem.

Methods

A literature review of different published and unpublished articles, reports, and documents was used. The Lebov one health and Linton frameworks were merged to develop a new framework. This framework was formed and followed to match the study objectives and to guide the review.

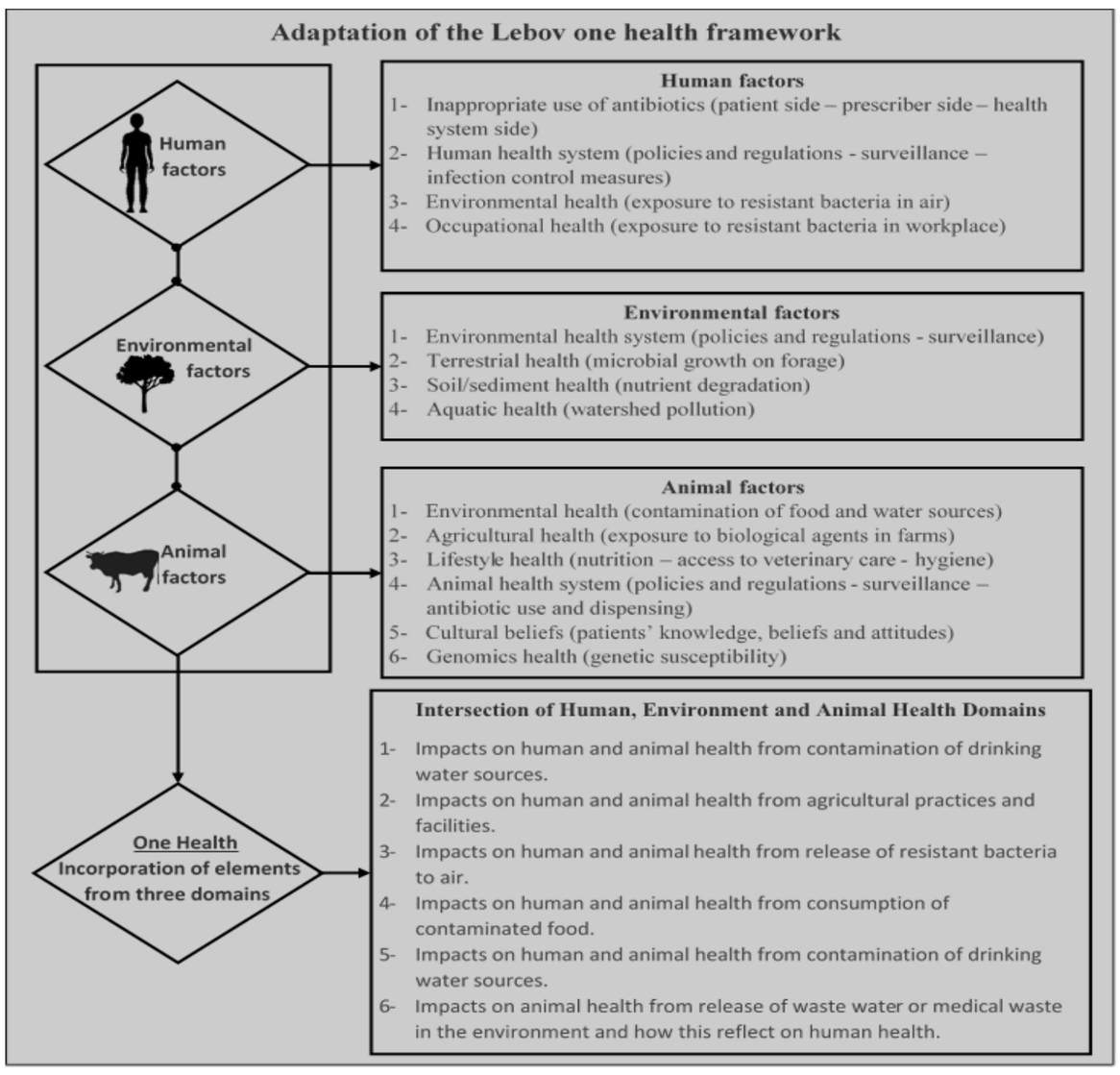

Figure 1. Adapted framework of Lebov et al. and Linton frameworks.

Results

The review showed the main drivers to the emergence and spread of antibiotic resistance (ABR) in Egypt from a one health perspective. Extensive and inappropriate use of antibiotics in humans and weak awareness among community members and healthcare professionals increase ABR emergence and spread. Lack of strict regulations and monitoring on antibiotic dispensing facilitates ABR emergence. On the other hand, lack of data about the ABR pattern in Egypt due to limited surveillance system acts as a barrier to effective interventions, and it hinders efforts to combat ABR in Egypt.

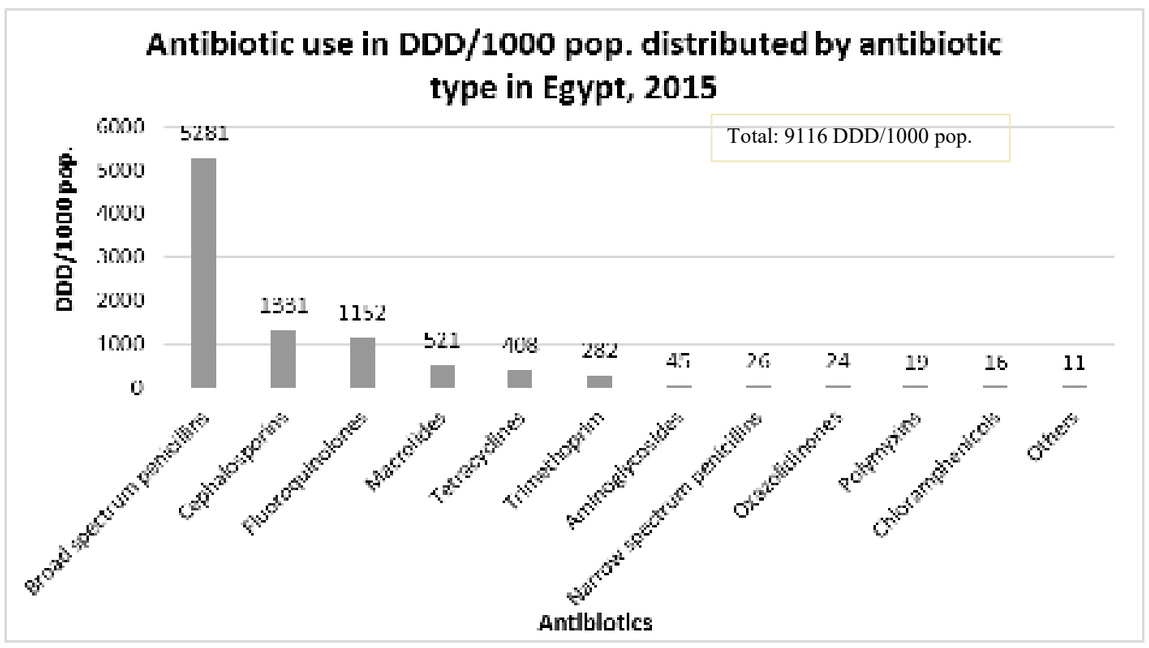

Chart 1: Distribution of consumed antibiotics in Egypt in 2015 (distributed by type in DDD/1000 population).

Results

Unregulated agricultural practices, antibiotic residues in wastewater, resistant bacteria in water, soil, air, and horizontal gene transfer, are the main environmental influencing factors. The main animal factors that influence ABR are extensive antibiotic use in animals and aquaculture. Challenges to controlling efforts were identified as lax regulations, lack of enforced policies, and limited surveillance.

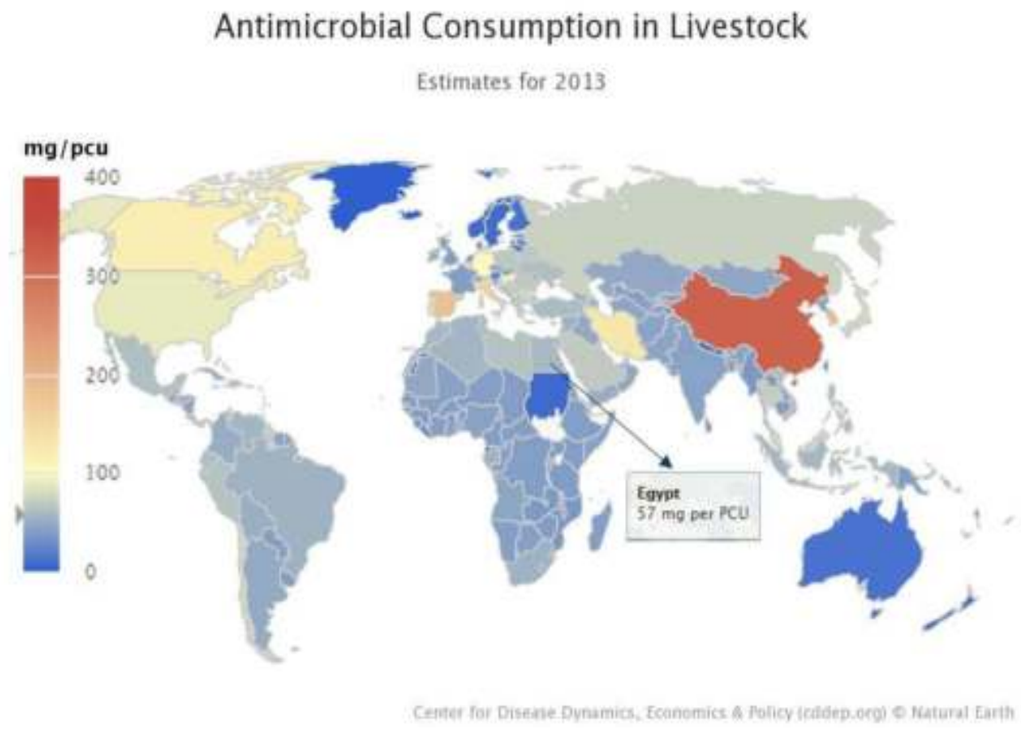

Figure 2. Antimicrobial consumption in livestock per country in 2013, with focusing on Egypt.

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Conclusion

ABR problem in Egypt is increasing, and integrated interventions are needed to tackle it. A national awareness campaign will help in behavior augmentation regarding antibiotic use. Encouraging research on ABR will find tailored opportunities based on the national situation. A well-established surveillance system will give a comprehensive figure on the circulating resistant bacteria. Strict regulations and regular monitoring will help in combating ABR in Egypt.

Although some factors have more evidence to support their links to the effect of ABR in Egypt, it is hard to prioritize those factors, since they act as a network of combined elements.

Recommendation	Stakeholder(s)
Regulate the antibiotic dispensing	Ministry of health and population
Establish an integrated surveillance system	Ministry of health and population Ministry of agriculture and land reclamation Ministry of environment
Induce and expand research on ABR	Ministry of health and population Ministry of Higher Education and Scientific Research
Enhance community and health professional knowledge about antibiotics and ABR	Ministry of health and population

Table. 1. Recommendations with stakeholders that are responsible for implementing them.

Acknowledgement

Special thanks to the Royal Tropical Institute, Vrije Universiteit Amsterdam, and the Dutch Organization for International Cooperation in Higher Education, who supported me during my journey working on this study.

ENGAGING LOCAL COMMUNITY ACTIVISTS TO RESPOND TO CYCLONE IDAI IN THE URBAN CONTEXT OF BEIRA, MOZAMBIQUE

Authors

Andrea Atzori and Maria Brighenti
Doctors with Africa CUAMM

Abstract

Cyclone Idai had a dire impact on the city of Beira in Mozambique, devastating people's homes and agricultural production. Instead of creating new ad hoc emergency initiatives, Doctors with Africa CUAMM (CUAMM) could coordinate an effective disaster response with a network of community groups; assistance providers to the population prior to the disaster, they expanded their role in its aftermath to facilitate emergency communication and reporting.

Cyclone Idai

On the night between 14 and 15 March 2019, tropical Cyclone Idai struck the city of Beira, capital of the Sofala province in central Mozambique, with horrific consequences for the local population of about 600,000. Some 239,682 homes were destroyed or severely damaged, and approximately 142,327 displaced people were housed at disaster accommodation centers. In the initial stages of the crisis, four main forms of direct damage were identified:
1) Destruction and interruption of the water supply and massive damage to sanitation facilities, with the lack of clean water putting the population at risk of contracting waterborne diseases including cholera.
2) Destruction of homes, loss of personal property and nonfood items, and further material damages, putting the population at risk of indefinite displacement and even greater personal insecurity, especially with regard to the most vulnerable population groups such as women and children.
3) Damages to health facilities, including loss of supplies and other materials. According to the local authorities, at least 24 health units were impacted in the provinces of Sofala, Manica, Zambezia and Inhambane, suspending health services for patients with acute, chronic and/or other conditions necessitating medium- to long-term care (e.g., tuberculosis and HIV).
4) Damage to agricultural production both in the short term, with crop losses and food shortages in local markets, and the medium to long term, with damage to the agricultural substrate and potential damage for upcoming harvests.

Figure 1. The city of Beira right after the cyclone.

Humanitarian and Community-Level Response

An international humanitarian response was launched in the immediate aftermath of the cyclone, with materials and emergency teams being sent in from all over the world through the only entry point available, Beira Airport. As material and human resources continued to accumulate, it became critical to find the most efficient ways to reach and distribute the aid to cyclone-affected communities.

Doctors with Africa CUAMM responded through an emergency relief intervention, leveraging on already existing local peer-to-peer HIV organizations instead of creating new ad hoc emergency initiatives. CUAMM engaged with 143 HIV activists from three local organizations: Kuplumussana, Anandjira, and Association Geraca̧o Saudavel (AGS). Themselves impacted by the cyclone, these groups had previously worked with CUAMM to implement a program for the education, counseling, testing, and support of HIV patients. Their indepth familiarity with the urban dynamics of Beira, and their ability to reach people and identify the worst situations made them ideal partnering networks with which to respond to the local population's needs as quickly and efficiently as possible.

CUAMM therefore decided to "reactivate" the three community groups by securing their offices, and providing them with basic livelihood necessities and communication means. Within 48 hours, working together with local health authorities and the national humanitarian response unit, an intensive training course was developed on:

- WASH (water, sanitation and hygiene)
- Nutrition
- Water purification
- Psychosocial support for minors and their families.

Each activist was then given a kit containing posters, data-collection materials, disposable items, and so forth, and a coordinator-supervised work plan.

Figure 2. Training session for activists to respond to the emergency.

	Kuplumussana	Anandjira	AGS
Number of activists	32	70	41

An Extra(ordinary) Service That Made It Possible To Guarantee The Ordinary As Well

Activists carried out prevention work, identifying cases of cholera, at-risk minors, and families with immediate needs, and providing basic humanitarian kits. A few days later, CUAMM used the same scheme in the rural districts of Dondo and Nhamatanda, training 94 activists and sending them to the field.

From the moment that the cyclone hit on through June 2019, these activists were able to reach 45,874 families in the city of Beira, 14,375 families in the Dondo district, and 8071 families in the Nhamatanda district, delivering a speedy response to their basic needs and mitigating the impact of the cyclone-related suspension of health services on patients who had been receiving treatment for HIV and related coinfections.

Additionally, a new electronic data-collection tool was introduced immediately after Idai to overcome the loss of data and improve monitoring. Activists were equipped with an Android smartphone to collect field data and monitor people living with HIV by confidential GPS tracing. Almost 4500 patients with HIV were reached from the time of Idai hitting to December 2019.

Figure 3. Activists in the city of Beira.

Already existing community health networks in Africa are a crucial resource in crisis situations. With adequate training and leaveraging on human and material resources already "on the ground", it is possible to build resilient communities that are able to withstand disaster-related damage.

Closing remarks

The ability of the three community groups (Kuplumussana, Anandjira, and AGS) to effectively respond to the crisis generated by Cyclone Idai underscores the utility of leveraging such networks in times of emergencies in order to create a resilient system. It is crucial to provide them with regular material stocks, and, most importantly, make available training courses and programs (vocational and otherwise) without creating vertical structures that can be very costly to create and maintain.

Now, almost a year since the cyclone, the Mozambican population and healthcare services with international partners remain resilient, and the work conducted by the activists has been fundamental to mitigate the effects of the disaster on the general health and wellbeing of patients' families and their community.

HEALTH TECHNOLOGY AS COMMONS: TRUSTABLE, AFFORDABLE, ADAPTABLE

Geneva Health Forum 2020 · Open Village · www.openvillage.ch

Authors

Fabio Balli[A], Mathilde Matringe[B], Clement le Couedic[C], Jon Schull[D], Shikshya Gautam[D], Patrick Jandard[D], Emmanuel Kellner[E], Afroditi Anastasaki[F], Katerina Serada[G], Samir K Brahmachari[H], Lukas Winter[I] Pierre Lonchampt[J], Felix Schoeller[K], Anirudh Krishnakumar[L], Bastian Greshake[M], Kevin Lhoste[N], Christophe Parot[O] and Guillaume Jeanmaire[A]

[A]Breathing Games [B]EchOpen [C]Aura [D]Enable [E]LogAir FOpen Geneva [G]Tondo [H]Open Source Drug Discovery
[I]Open Source Imaging [J]Helpful Engineering [K]Fuga [L]MindLogger [M]Open Humans [N]CRI Paris [O]Join Seeds

6 in 10 humans still have no access to care, or do not adhere to it, despite rising investments. Alcohol-based hand rub and WikiMed illustrate how creating freely reproducible equipment and software with communities can: save millions of lives, increase integrity, cut costs by 90%. Cooperation-driven care is the only way to realize the 2030 agenda in time: health for everyone. We presente nine alternatives to the dominant proprietary excluding innovation model, to drive development towards a responsible, solidar society.

Hand prosthesis to ease one's daily life

A prosthetic hand usually costs 6-10 K€. Enable brings together over 30000 volunteers who design and distribute 3D-printed prostheses to vulnerable people.
www.enablingthefuture.org + www.gre-nable.fr + www.enablenepal.org

Drugs produced with integrity

India has a pioneer approach in pharmaceutics. Open-Source Drug Discovery brings together 7900 people who collectively develop open-source, low-cost therapies for neglected diseases such as tuberculosis, malaria, leishmaniasis. www.osdd.net

Open-sourcing MRI could save the German healthcare over 200 M=€ yearly

Medical imaging is crucial in diagnosing, understanding and treating a number of diseases. The Open-Source Imaging initiative gathers experts to create MRI scanners that can be built and maintained for a fraction of the cost of current MRIs.
www.opensourceimaging.org

Ultrasound scanner in the pocket

One in three persons have access to medical imaging. A portable ultrasound device usually costs 8-22 K€. EchOpen develops a probe to visualise organs on a smartphone. It helps guide the diagnosis and make patient management more fluid.
www.echopen.org

Detecting seizures with wearables

50 million people have epilepsy, 1/3 are drug resistant. Epileptic seizures lead to daily stress and social exclusion. We develop wearables and software to log and analyse biological data.
www.aura.healthcare + www.openhumans.org + www.cri-paris.org

Making air pollution a visible matter

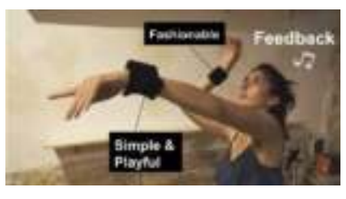
In Switzerland, one in seven premature deaths is linked to air pollution. LogAir helps everyone to map the air quality (fine particles) using cheap devices. Generating data can help avoid bad air quality, but can also motivate policy changes for healthier cities.
www.logair.io

Collecting and visualizing data

Mindlogger makes it easy for anyone to collect, analyze, and visualize data using mobile devices. Users are able to build their own activities, such as surveys, quizzes, digital diaries, or cognitive tasks.
www.mindlogger.org

Transforming gesture into sound

Fuga explores the potential of emerging technologies for preventing, diagnosing, monitoring, and rehabilitating mental health disorders in line with recent advances in psychiatry and neuroscience.
www.hoosh.space/fuga



Taking care of our breathing through play

Worldwide, one child in ten has asthma, one senior in twenty has COPD, a disease caused by pollution and smoking. Breathing Games is developing a multiplayer game and a breath sensor to promote respiratory health.
www.breathinggames.net

We also discuss ageing, public policies, quality systems, and cryptocurrencies.

Videos and more Open Village · www.openvillage.ch ·Cite: wwww.doi.org/10.5281/zenodo.4327587

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SPECCHIO

Une e-plateforme genevoise pour le suivi dynamique de la santé de la population

Auteurs

Helene Baysson[1], P. Collombet[1], Stéphane Joost, Homa Attar Cohen, Idris Guessous and Silvia Stringhini

Contexte

- Le Concept cantonal de prévention et de promotion de la santé 2030 identifie 8 axes stratégiques pour la prévention et la promotion de la santé dans le canton de Genève.
- Les décideurs de santé publique ont besoin d'informations fiables et récentes concernant l'état de santé de la population genevoise.
- Dans ce contexte, **l'Unité d'épidémiologie populationnelle** (UEP) des **Hôpitaux Universitaires de Genève** (HUG) en collaboration avec la Direction Générale de la Santé (DGS) et **l'Université de Genève** met en place une étude populationnelle en ligne auprès des résidents de Genève grâce à **une plateforme digitale: Specchio**.

Figure 1. Les huit axes stratégiques pour la prévention et la promotion de la santé.

Objectifs

L'objectif est de mettre en place une étude longitudinale populationnelle en ligne auprès de résidents genevois volontaires afin de:

- Mieux connaitre l'état de santé objectif et subjectif de la population genevoise.
- Disposer d'indicateurs récents, fiables et homogènes sur la santé de la population.
- Evaluer et guider les politiques publiques de promotion et de prévention de la santé.

Méthodes

Tous les résidents de Genève âgés de plus de 18 ans, seront invités à participer.

Les données recueillies proviendront directement des participants via des questionnaires en ligne. Ceux-ci porteront sur la perception de leur état de santé, leurs comportements (alimentation, exercice physique, sommeil, etc.) et leur cadre de vie.

Elles seront complétées, avec leur accord, par d'autres sources d'informations telles que les bases de données médico-administratives (ex: données de consommation de soins) ou les bases de données environnementales (ex: exposition au bruit).

Le suivi des participants sera longitudinal, sur plusieurs années.

Résultats

- La plateforme internet Specchio permet de recueillir des données en ligne auprès de participants volontaires.
- Les campagnes d'information et de recrutement de participants sont facilitées grâce aux contacts par e-mails.
- Les questionnaires en ligne sont adaptables au contexte sanitaire.
- En 2020, et suite à l'épidémie de COVID-19, il a été decidé de tirer partie de la plateforme Specchio pour créer Specchio-COVID19.

Specchio-COVID19

- De mars à septembre 2020, l'UEP a mené **deux études de séroprévalence** https://www.hug.ch/medecine-premier-recours/unite-epidemiologie-populationnelle-uep
- **SEROCoV-POP**: dès le mois de mars 2020, l'UEP a sollicité les participants de l'étude Bus-Santé pour avoir une estimation de la séroprévalence de la population du canton de Genève (8'344 participants).
- **SEROCoV-WORK+**: dès le mois de mai 2020, cette étude a été mise en place pour connaitre le statut immunologique des travailleurs, en ciblant les travailleurs « non-confinables » (10'604 participants).

La mise en place de la **plateforme digitale Specchio-COVID19** va permettre:

- Le suivi des symptômes et du statut sérologique des participants SEROCoV-POP et SEROCoV-WORK+.
- Le suivi de l'impact sanitaire, économique et social de l'épidémie, via des questionnaires en ligne.
- L'inclusion des participants d'autres populations (notamment dans le cadre du programme national de Corona Immunitas https://www.corona-immunitas.ch/).
- 80 % des participants ont d'ores et déjà indiqué qu'ils souhaitaient rejoindre Specchio-COVID19.

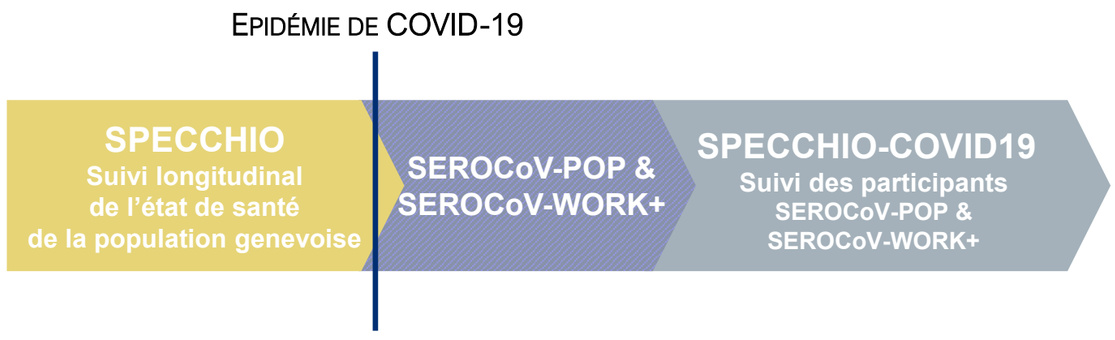

Figure 2. Les étapes de la mise en place de la plateforme Specchio-COVID19.

Pendant les mois d'octobre et novembre 2020, **20'000 personnes seront invitées** à rejoindre Specchio-COVID19.

Figure 3. Page d'accueil de la plateforme Specchio-COVID19. https://www.specchio-COVID19.ch/.

Perspectives

- Specchio-COVID19 est pour l'instant conçue pour permettre le suivi épidémiologique des participants déjà inclus dans les études de sérologies menées par l'UEP.
- Il est prevu d'élargir le recrutement et de proposer (en 2021) à l'ensemble des genevois de rejoindre la plateforme Specchio-COVID19 pour collecter des données permettant de mesurer l'impact de la crise sanitaire sur plusieurs dimensions de la santé, son impact économique et social.
- Une attention particulière sera portée à l'inclusion des populations dites «vulnérables».

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UNIVERSITÉ DE GENÈVE
FACULTÉ DE MÉDECINE

SPECCHIO-COVID19
Suivi de la pandémie pour les genevois

TOXIC METAL LEVEL AND DIETARY RISK ASSESSMENT OF *AMARANTHUS VIRIDIS* GROWN IN PERI-URBAN AREAS IN KINSHASA, DEMOCRATIC REPUBLIC OF THE CONGO

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I. Background

Vegetables are an essential part of the human healthy diet and considered as sources of many essential nutrients to maintain normal physiological functions, antioxidants, dietary fiber metabolites and to prevent several diseases.

In the Democratic Republic of the Congo (DRC), particularly in Kinshasa, its capital city, the urban agriculture plays an economic and social role in daily life of the population and provides more than 60% of the consumed fresh produce supply of the city. After cassava leaf, *Amaranthus viridis* (*A. viridis*) has been identified to be the second most consumed leaf vegetable in the DRC. However, the quality evaluation of water used for urban agriculture irrigation, as well as the accumulation of pollutants such as heavy metals in fresh produces like *A. viridis*, are still largely unstudied.

II. Objectives

• To investigate the levels of toxic metals (Cr, Co, Ni, Cu, Zn, As, Cd, Pb and Hg) in irrigation water and soil from 8 main gardening sites of *A. Viridis* cultivation in peri-urban areas in Kinshasa.
• To evaluate the accumulation of these metals in *A. viridis*
• To evaluate the potential environmental and consumer human health risks

III. Methodology

Water, soil and plant sampling took place in July/August 2018 from 8 main gardening sites of Kinshasa, when *A. viridis* reached the stage of harvest.

- Quantification of toxic metals Cr, Co, Ni, Cu, Zn, As, Cd and Pb in water, soil and plant (root, stem and leaf) samples by ICP-MS
- Hg analysis in soil and plant samples using Advanced Mercury Analyser; AMA
- Health hazard evaluation for *A. viridis* consumption performed by:
✓ Comparing the metal values in *A. viridis* leaves with permissible reference levels (FAO/WHO)
✓ Estimation of consumer heath risk by computing the targeted risk quotient (THQ), the hazard index (HI), the estimation of daily intake (EDI) and the estimation of weekly intake (EWI)
- Statistical analysis

IV. Results

Table 1. The mean of metal concentrations in mg kg^{-1}±SD in A. viridis and their respective permissible limits as set by Food and Agriculture Organization

Sampling site		Cr	Co	Cu	Zn	As	Cd	Pb	Hg
Tshuenge (TS)	Leaf	1.91±0.04	0.19±0.03	1.82±0.9	106.54±2.13	0.15±0.03	0.18±0.04	2.27±0.45	0.06±0.02
	Stem	1.54±0.03	0.04±0.00	1.27±0.03	52.68±1.05	0.02±0.00	0.02±0.00	1.34±0.03	0.02±0.00
	Root	2.68±0.05	0.21±0.00	2.26±0.05	76.31±1.53	0.29±0.01	0.23±0.00	3.43±0.07	0.08±0.00
Kimpoko (KI)	Leaf	1.12±0.02	0.17±0.00	2.35±0.05	21.83±0.44	0.05±0.00	0.01±0.00	0.02±0.00	0.01±0.00
	Stem	0.27±0.01	0.04±0.00	1.52±0.03	7.72±0.15	0.01±0.00	0.01±0.00	0.01±0.00	0.01±0.00
	Root	3.20±0.06	0.26±0.01	4.07±0.08	18.12±0.36	0.32±0.01	0.03±0.00	1.23±0.02	0.08±0.00
Mombele (MO)	Leaf	1.85±0.04	0.12±0.00	0.83±0.02	142.47±2.85	0.08±0.00	0.42±0.01	2.34±0.05	0.06±0.00
	Stem	0.43±0.01	0.08±0.00	0.34±0.01	74.86±1.50	0.02±0.00	0.11±0.00	1.37±0.03	0.02±0.00
	Root	2.73±0.05	0.14±0.00	1.30±0.03	128.31±2.57	0.85±0.02	0.62±0.01	14.76±0.30	0.15±0.00
Monastery (MON)	Leaf	1.05±0.02	0.32±0.02	19.32±0.39	47.52±0.95	0.19±0.00	0.02±0.00	0.82±0.01	0.01±0.00
	Stem	0.36±0.01	0.03±0.00	6.27±0.13	12.38±0.25	0.01±0.00	0.01±0.00	0.06±0.00	0.01±0.00
	Root	3.61±0.07	0.94±0.00	31.41±0.63	36.36±0.73	0.97±0.02	0.57±0.01	26.54±0.53	0.14±0.00
Cecomaf (CE)	Leaf	2.39±0.05	1.73±0.03	16.11±0.32	652.91±13.06	0.10±0.00	1.62±0.03	8.91±0.18	0.09±0.00
	Stem	1.49±0.03	0.65±0.01	7.63±0.15	449.79±9.00	<LOD	0.77±0.00	7.11±0.14	0.01±0.00
	Root	7.03±0.14	1.03±0.02	33.89±0.68	240.71±4.81	0.51±0.01	1.04±0.02	86.94±1.74	0.18±0.00
Rifflaert (RI)	Leaf	2.97±0.06	0.20±0.00	9.80±0.20	176.84±3.54	0.09±0.00	0.35±0.01	8.29±0.17	0.04±0.00
	Stem	1.22±0.02	0.05±0.00	4.22±0.08	99.87±2.00	0.01±0.00	0.13±0.00	6.34±0.17	0.01±0.00
	Root	5.81±0.12	0.66±0.01	18.20±0.36	118.27±2.37	0.75±0.02	0.72±0.01	21.63±0.13	0.15±0.00
Lemba-Imbu (LI)	Leaf	1.80±0.04	0.23±0.00	4.17±0.08	673.30±13.47	0.01±0.00	1.57±0.03	9.82±0.20	0.03±0.00
	Stem	1.66±0.03	0.14±0.00	3.36±0.07	212.79±4.26	<LOD	1.25±0.03	4.20±0.08	0.01±0.00
	Root	9.12±0.18	0.90±0.02	7.59±0.15	425.88±8.52	1.58±0.03	2.98±0.06	127.05±2.54	0.17±0.00
Saio (SA)	Leaf	2.31±0.05	0.46±0.01	5.32±0.11	112.44±2.25	0.03±0.00	1.62±0.03	9.76±0.20	0.04±0.00
	Stem	1.77±0.04	0.35±0.01	1.25±0.03	62.65±1.25	0.01±0.00	0.95±0.02	4.20±0.08	0.01±0.00
	Root	7.03±0.14	0.78±0.02	8.53±0.17	97.49±1.95	3.87±0.08	2.43±0.05	113.16±2.26	0.38±0.01
China MLCF (2014)	Leaf	0.5	-	-	-	0.5	0.2	0.3	0.01
	Stem	0.5	-	-	-	0.5	0.1	0.3	0.01
	Root	0.5	-	-	-	0.5	0.1	-	0.01
WHO/FAO (2003), JECFA, 2006.		1.3	-	40			0.1	0.3	0.001

Table 2. The targeted hazard quotient (THQ) of metals through consumption of A. viridis.

Heavy metal	Reference dose (mg/bwkgday)	Target hazard quotient (THQ)[a]		
		CECOMAF	RIFFLAERT	LEMBA-IMBU
Cr	0.003	0.923	1.077	0.697
Co	0.0003	6.700	0.767	0.900
Cu	0.04	0.467	0.284	0.334
Zn	0.3	2.523	0.683	1.829
As	0.0003	0.400	0.333	0.000
Cd	0.001	1.880	0.410	1.820
Pb	0.004	2.583	2.403	2.280
Hg	0.0001	0.500	0.500	0.300

Table 3. The estimated dietary intake (EDI) and the estimated weekly intake (EWI) (mg/kg bw /day or week) of Cr. Co. Cu. Zn. As. Cd. Pb. Hg from A. viridis leaf by consumers

Sampling site	Cr		Co		Cu		Zn		As		Cd		Pb		Hg	
	EDI	EWI	EDI	EWI	EDI	EWI	EDI	EWI	EDI	EWI	EDI	EWI	EDI	EWI	EDI	EWI
Cecomaf	2.77	19.39	2.01	14.04	18.67	130.72	756.83	5297.83	0.12	0.81	1.88	13.14	10.33	72.30	0.05	0.32
Rifflaert	3.23	22.64	0.23	1.62	11.36	79.52	204.99	1434.91	0.10	0.73	0.41	2.84	9.61	67.27	0.05	0.32
Lemba-Imbu	2.09	14.61	0.27	1.87	13.35	93.48	548.63	3840.44	0.00	0.00	1.82	12.74	9.12	63.86	0.03	0.24
Guidelines (FAO/WHO,	-	-	-	-	700	3500	1000	7000	2.14	14.98	1	7	3.6	25	0.23	1.61

V. Conclusion and recommandation

- Soil and irrigation water characteristics were within the allowed Food and Agriculture Organization values.
- *A. viridis* is highly contaminated by Cr, Co, Cu, Zn, As, Cd, Pb and Hg presenting potential adverse effects to consumers.
- The vegetable contamination can be explained by chemicals used to combat and prevent *A. viridis* diseases, and the vehicle and motorcycle emissions
- around.
- The results from this study strongly recommend the control and limitation (e.g., by regulation and raising awareness) of the use of unknown compounds and pesticides in urban agriculture to reduce potential health risks.
- Additionally, as many of these agricultures are mainly carried out alongside heavily trafficked roads, the relocation of such a site is recommended in order to reduce vehicle and motorcycle emission deposits on foodstuffs.
- Finally, the authors ascertained here that more detailed periodical studies should monitor heavy metal content in these vegetables are needed to realistically
- predict the human health-associated risks.

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UNIVERSITÉ DE GENÈVE

USE OF RESPONSIVE FEEDBACK TO DEVELOP A MATERNAL AND CHILD NUTRITION COUNSELLING BOT

An Innovation Pilot Project

Authors

Namrata Tomar, Sriya Srikrishnan, Neal Lesh and Brian Derenzi

Malnutrition prevalence is predominant in India, with nearly half of all deaths in children under 5 attributable to undernutrition. Despite the Indian government taking a multifaceted approach towards addressing this problem, there are insufficient touch points between the mothers and frontline workers of nutrition-specific schemes. It is almost impossible to imagine achieving the Sustainable Development Goals or Universal Health coverage without increasing the use of digital health technology.

Figure 1. Extending digital health systems to direct-to-client innovation.

Direct-to-Client Engagement

Recognizing the increased ownership of smartphones in conjunction with the need for multiple touch points with clients in the health system, Dimagi identified direct-to-client tools as an important area for innovation. In partnership with the state and local government, a digital coach, Poshan Didi, was deployed in Katni, Madhya Pradesh to provide counseling to mothers on age-appropriate nutrition-related topics given the evidence of influencing positive household behavior through the reiteration of counseling messages.

Figure 2. Visual representation of Poshan Didi.

Implementation Design

A total of 100 mothers were enrolled, as shown in Figure 3. All participants completed a baseline survey, and 76 were included in the end-line survey. At midline, 26 qualitative one-on-one interviews were conducted.

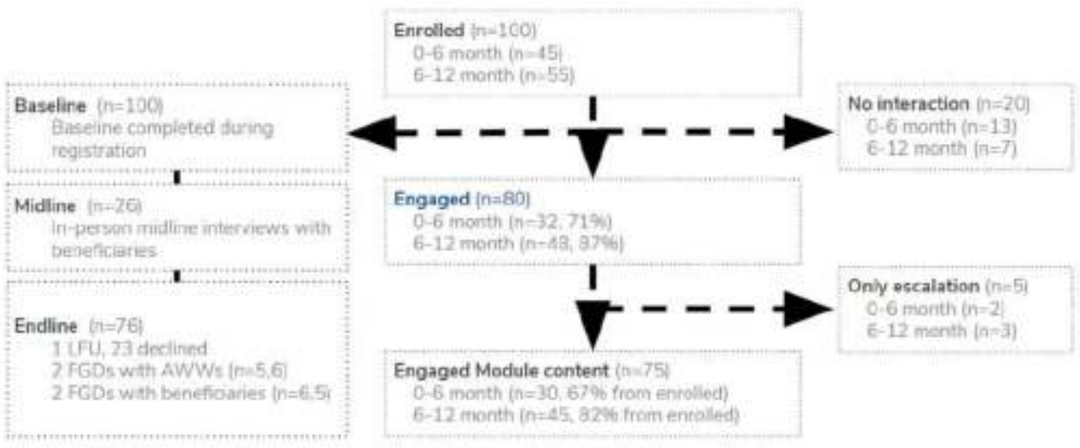

Figure 3. Summary of activities and enrollment of users for Poshan Didi Implementation

Figure 5. Drawings of Poshan Didi by mothers that depict the personification of trust and how perceptions vary.

Results of Engagement

Women referred to Poshan Didi with respect, indicating that they viewed her as a higher authority and not just an automated system. In our pilot, 80% of clients replied at least once to a chatbot-generated message, and 63% replied 5+ times over a 2 month period, while 64% engaged beyond the chatbot content by discussing at least one issue with a nurse that responded to escalated messages.

Lessons For Future Direct-to-Client Research

Client-centered care requires many more contact points, and chatbots can act as an appropriate future health tool. It is important to facilitate collaborative decision making, rapid prototyping, and user acceptance by testing and developing locally appropriate digital solutions.

Responsive Feedback Methodology

In order to accelerate the learning process, a few core characteristics were adopted:

- agile, responsive, and adaptive methodology;
- clearly articulated theory of change;
- continuous monitoring and testing to measure and respond to assumptions and identify implementation failures sooner; and
- active stakeholder engagement with decision makers.

Continuous Monitoring of Data

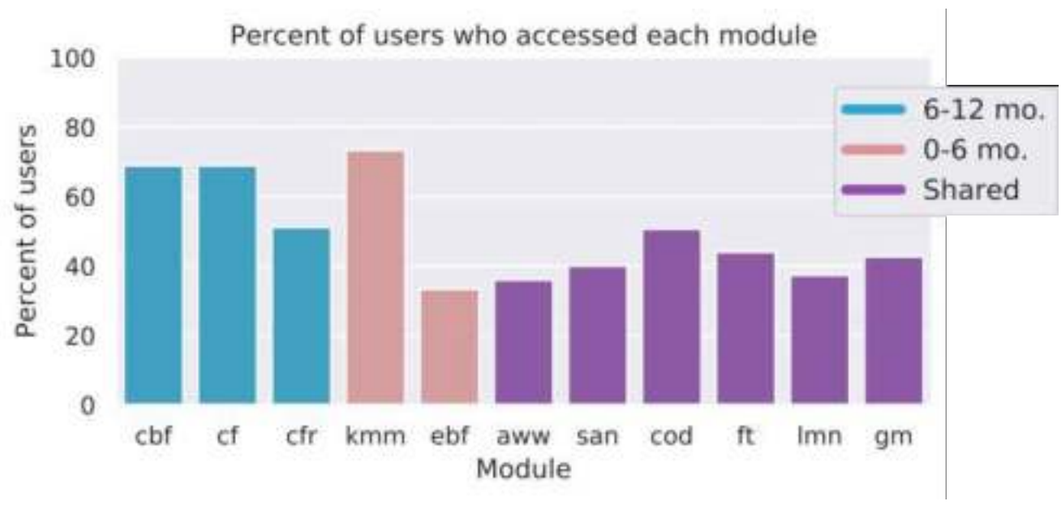

Figure 4. (X axis) Abbreviations for various modules in Poshan Didi content that are specific to the age range of children (e.g., cf: complementary feeding; kmm: kangaroo mother care). Percentage of users who engaged with each module. Denominator was determined by the total number of users exposed to the particular module.

Dimagi is contributing to the next generation of digital technology by improving our existing products and developing new products, such as CommunityPulse, for direct-to-client engagement

Just as digital tools like CommCare allow for organizations to deploy mobile apps for frontline workers across a wide range of use cases, CommunityPulse allows for organizations to extend health systems with conversational agents for a wide range of use cases. The first deployment of CommunityPulse is a chatbot called Poshan Didi (“nutrition sister”).

Figure 6. Storytelling exercise with frontline workers to investigate user workflows and understand unique challenges.

Acknowledgements

The authors are grateful to the Department of Women and Child Development, Madhya Pradesh, Bill and Melinda Gates Foundation and M&C Saatchi for their support.

STUDY THE EFFECT OF COMMUNITY NUTRITION EDUCATION ON FOOD SAFETY AND HEALTHY NUTRITION TO IMPROVE KNOWLEDGE, ATTITUDE, PRACTICE OF POPULATION FOR CREATING NEW NUTRITION POLICY

Authors

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Introduction

In a different part of the country, food and nutrition education in primary health care network and private sector educated people, but it was not effective enough, especially nutrition and unhealthy diet that related to the prevalence of non-communicable disease. Policy-makers investigated an efficient approach to improve this part of the population's lifestyle.

Methods

The study was conducted in two cities of the Isfahan province in Iran. For 12 weeks in two groups through a quasi-randomized clinical trial, 750 men and women (age 19-65 years) were selected from urban areas. Before and after 3 months, 580 participants came to an end the study (intervention group = 450) and (control group = 130) were assessed KAP of healthy nutrition and food safety via FFQ, 24-hour food record, and KAP questioner.

They participated (3 sessions per week) in 4 different classes of nutrition, including: food safety and processed food; healthy nutrition and diet; choose healthy food; cooking healthy food. A paired t-test and a student t-test were used for data analysis.

Figure 2. Food Safety, healthy Nutrition Study.

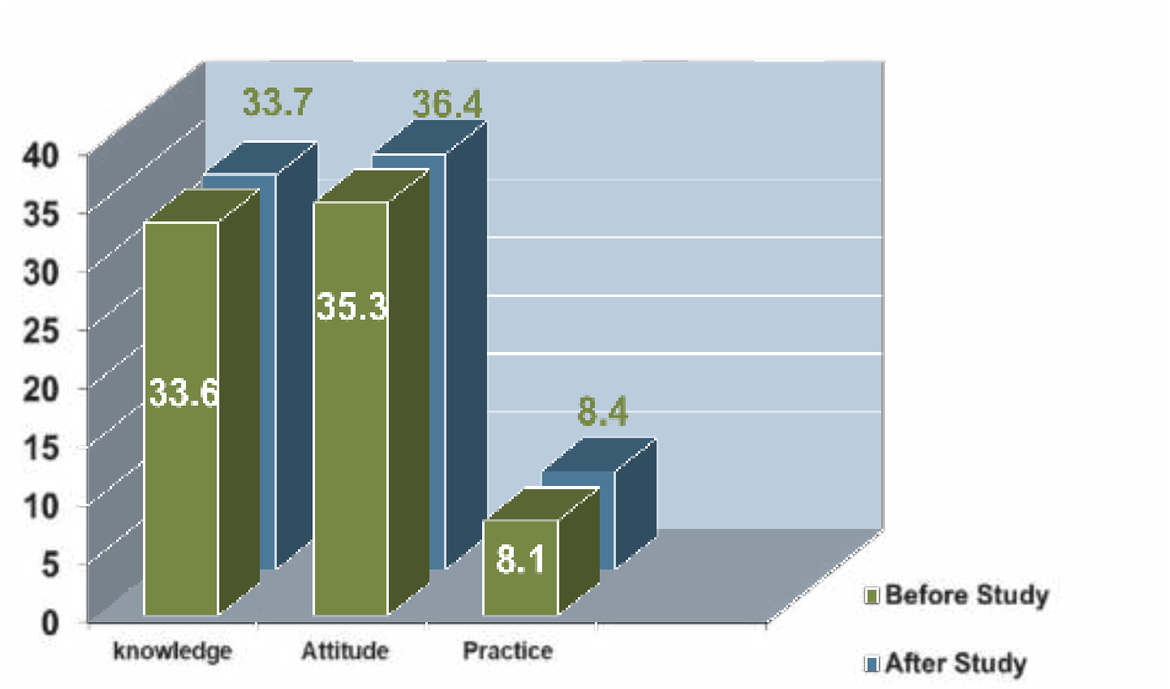

Figure 3. Compare of mean score of knowledge, Attitude, Practice of Control group before and after the study of Food Safety, Healthy Nutrition.

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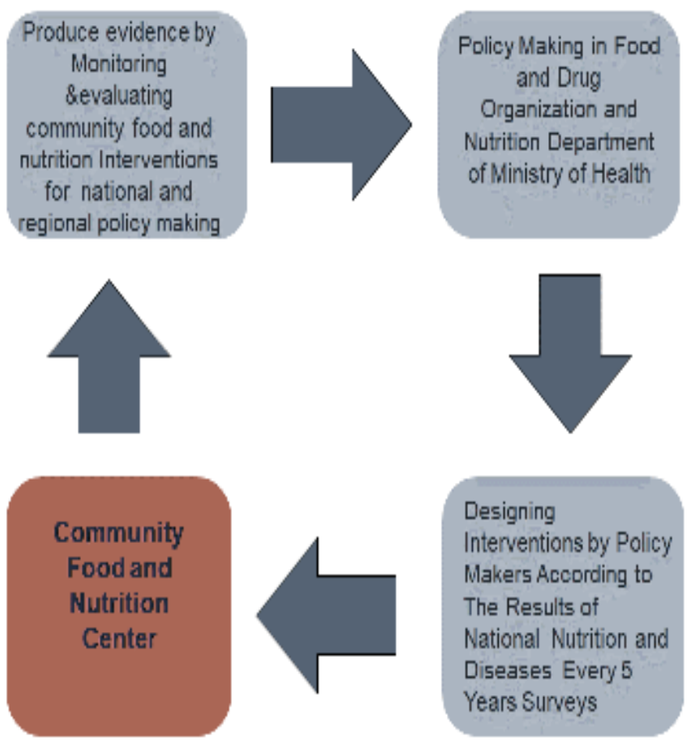

New policy

Evidence from national food & nutrition surveys and STEPwise approach to surveillance (STEPS) in Iran shows that dietary habit indices and food safety KAP of Iranian are in concerning zone. in addition non- communicable diseases are prevalent especially in large cities such as Tehran. These results guided researchers to produce evidence by community nutrition education for policy decision.

Figure 5. circulation of food and nutrition interventions in community New policy.

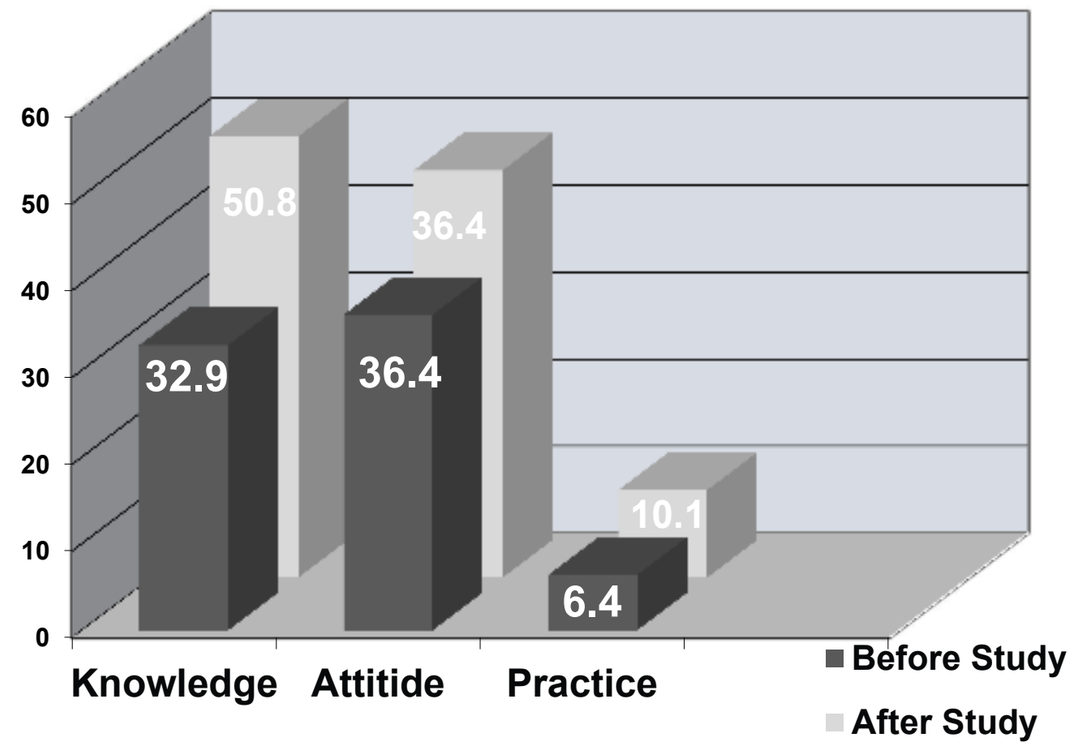

Figure 1. Comparison of mean score of knowledge, Attitude, Practice of Intervention group before and after the study of Food Safety, Healthy Nutrition.

Results

Comparing two groups before and after 3 months of interventions, demonstrated a significant increase in KAP of intervention group vs. control group respectively.

- Knowledge (50.8±16 vs. 33.7±13.3)
- Attitude (46±9.6 vs 35.52±8.4)
- Practice (10.1±4.7 vs. 8.4±3.6). p≤0.01 in KAP between two groups.
- There was no significant difference in KAP of the control group before and after the study.

Conclusion and New Policy

The results of the study showed that

- Community food and nutrition education design, according to the culture, habits, and people's needs, is accepted by population and is efficient to improve behavioral diet.
- Choosing the right manner is a key point. We designed a community food and nutrition center that is fitted on the primary health care network and presented this new policy to the Health Minister of Iran.
- Now, the pilot of the study for implementing this policy is conducting in two districts of Tehran (capital of Iran) and on 7000 citizens in of all ages.

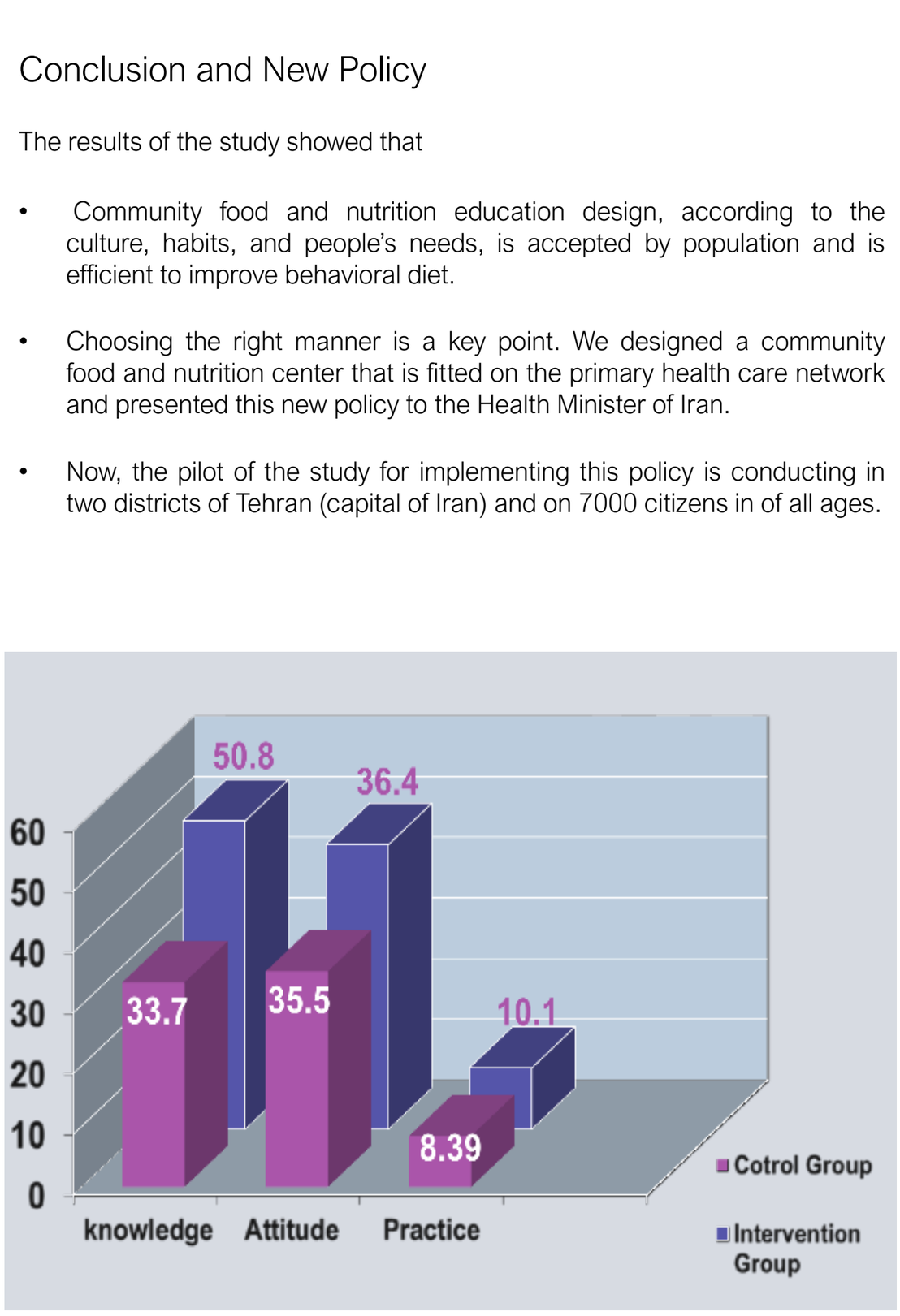

Figure 4. Comparison the mean score of knowledge, Attitude and Practice between Control group and intervention group after the end of study. Food Safety, Healthy Nutrition.

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Objective

This study explores the procedure to improve food and nutrition KAP of the population according to community needs and design policy to implement food and nutrition education in the PHC network in Iran.

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TEHRAN UNIVERSITY OF MEDICAL SCIENCES

MAGNITUDE AND SOCIO-DEMOGRAPHIC DETERMINANTS OF ACCESS TO PRIMARY HEALTH CARE SERVICES AMONG ADULT MEN AND WOMEN IN ALBANIA

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Introduction

Access to healthcare services is central in the performance of global health systems.

Objective

The objective of this study was to assess the magnitude and socio-demographic determinants of access to health services among adult primary health care (PHC) users in Albania.

Methods

A cross-sectional study was conducted in 2018-19 in five major regions of Albania with a representative sample of 1553 adult PHC users (704 men and 849 women; overall mean age: 54.6 ± 16.4 years; response rate: 94%). A structured interviewer-administered questionnaire inquired about the access to and affordability of PHC services. Furthermore, information on a wide array of demographic factors and socioeconomic characteristics was collected.

Results

Overall, 28% of survey participants reported not having been able to access medical services in the past year when needed. The inability to access health care services was considerably more prevalent among women (31%), Roma and Egyptian communities (76%) and among poor individuals (58%). The main reasons for the inability to access health care services included financial constrains, poor health status, distance to health centres, and lack of trust in the healthcare system. Furthermore, about 9% of participants (12% in women vs. 5.0% in men) reported that they had to pay (bribe) during their last health visit at the PHC centres.

Conclusions

Decision makers and policymakers in Albania and other transitional countries should be aware of low access to PHC services in general, but particularly among vulnerable population groups including women, ethnic minorities, and the low socioeconomic categories.

A project of the Swiss Agency for Cooperation and Development SDC

HAP health for all project

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Swiss Agency for Development and Cooperation SDC

Implemented by Swiss TPH
Swiss Tropical and Public Health Institute

DOES STRONGER PRIMARY HEALTH CARE IMPROVE HEALTH CARE ACCESS FOR PERSONS WITH SPINAL CORD INJURY?

Authors

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Keywords

healthcare services; access; healthcare system; primary healthcare system; spinal cord injury (SCI)

Background

Spinal cord injury (SCI) is damage to the spinal cord. It is a complex life-long high-cost condition, often accompanied by secondary conditions. SCI has low prevalence (<0.1% population). Approximately 80% of those with SCI are male.

Persons with SCI tend to have high:
- service use frequency
- service use variability
- interdisciplinary of care
- inpatient stays

Appropriate in-time health care can considerably reduce the risks of premature death and preventable secondary complications, which lead to unplanned rehospitalizations.

The more severe health condition a person has, the less likely they are to obtain comprehensive primary care. This is also due to the ineffective design of the healthcare system, which results in access barriers. Access should here be understood within its five dimensions: acceptability, approachability, availability and accommodation, affordability, and appropriateness. Primary healthcare (PHC) is viewed as the foundation for any healthcare system, which should allow better access. Access to primary care is specifically considered to be an optimal indicator of access, since it is a primary healthcare service and certain inequalities are manifested more with regard to general practitioners than specialists. There is ongoing discussion on the healthcare provision model for persons with SCI, whose needs cross the boundaries levels of care. The question is if the same positive outcomes of PHC would be applicable. Secondary conditions are often preventable and manageable in the community; hence, overutilization and duplication of services is unnecessarily increasing the cost of this already costly condition for both the patient and the system. Different factors like rural living and low income further impede access to services. Primary and preventive care needs are less met in persons with SCI, even if PHC is well-established. This highlights the necessity to not only think of a better provision model, but also to look for barriers that are specifically faced by persons with SCI.

Large-scale international comparisons/classifications and studies that include diverse countries on topics of SCI, healthcare utilization, and access are rare. This study will bridge the gap by analyzing and comparing countries with different characteristics.

Objective

To examine the impact of a health care services provision model on access to healthcare services for persons with SCI across 11 European countries.

Researsch questions

What component of access is mostly altered by the type of healthcare service provision model? What is the impact of the healthcare system on access to services for persons with SCI?
Does a stronger primary healthcare system allow improved access for persons with SCI? If so, to what extent?

Hypothesis

Primary healthcare-oriented systems allow improved access to health care services.

Methods

International Spinal Cord Injury Survey (InSCI) (2017–2019) is the first international survey that aims to comprehensively describe the lived experience of a specific health condition.

The survey is part of a larger project International Learning Health System for Spinal Cord Injury Study (LHS-SCI), embedded in WHO's Global Disability Plan. LHS-SCI was launched in 2017 with support of WHO, International Society for Physical and Rehabilitation Medicine (ISPRM) and the International Spinal Cord Society (ISCoS). Survey's role is to gather data for further changes implementation, aiming at strengthening the healthcare system.

6658 respondents
11 countries

- ✓ France
- ✓ Germany
- ✓ Greece
- ✓ Italy
- ✓ Lithuania
- ✓ The Netherlands
- ✓ Norway
- ✓ Poland
- ✓ Romania
- ✓ Spain
- ✓ Switzerland

125 questions

Sampling:
- ✓ rehabilitation facilities
- ✓ acute and general hospitals
- ✓ patient organizations
- ✓ government agencies

Data collection method:
- ✓ paper-based survey
- ✓ online survey
- ✓ interviews

The study population includes adults with SCI living in the community. Those receiving first rehabilitation or first acute care during the data collection were excluded from the study due to the lack of experience of living with SCI in the community.

Each participation country had a National study center that led the data collection, including sampling, questionnaire translation and adaptation, reminder management etc. Swiss Paraplegic Research in Nottwil, Switzerland, coordinated InSCI and provided recommendations on sampling as well as data collection, storage, and analysis. Sampling strategy included random and non-random sampling with different sampling frames: national registries of persons with SCI; databases of: academic or level I trauma hospitals, specialized rehabilitation centers, and organizations for persons with disability or insurance agencies; samples from previous studies; and a combination of these frames. Each country obtained an ethical approval for conducting the survey and informed consent was signed by each study participant or authorized participant's representative. Collected data were de-identified and stored in a secure central database.

Data analysis

1. Strengths of primary care classified as strong, medium or weak:
classification of Kringos et al (2013)
The classification is based on 77 indicators across various PHC dimensions: primary care governance, economic conditions of primary care, primary care workforce development, access to primary care, continuity of primary care, coordination of primary care, and comprehensiveness of primary care.

2. Descriptive statistics by each access dimension.

3. Association between access and strength of primary care: logistic regression.

Expected conclusions

Primary healthcare-oriented systems allow improved access to health care services. Findings can be a guiding instrument for health care planning. Certain conclusions might be relevant to other groups with disability as well as the general population.

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CHALLENGES IN HEALTHCARE DELIVERY AFTER MEGA-EARTHQUAKE IN NEPAL: FROM A HEALTH RESCUER'S PROSPECTIVE

Authors

Shatdal Chaudhary and Subhank Singh

Introduction

In Nepal, a major earthquake with a magnitude of 7.8 Mw struck on 25 April 2015. It killed more than 9000 people and injured more than 23,000. We in Bhairahawa planned a medical relief team to help the earthquake victim in partnership with the Indo-Nepal Doctors Association, Universal College of Medical Sciences (UCMS), and NAMUNA Integrated Development Council.

Methods

We total of 51 doctors in three teams were involved in the relief and rescue mission for a total 15 of days in the Gorkha district. We reached the Gorkha district headquarters after obtaining the necessary permission from our local district officials. All the data related to patients treated and problems faced during the treatment were noted and analyzed.

Results

There were multiple national and international medical teams from Israel, Switzerland, Red Cross, and various NGOs, which were mostly unused. The situation was complete chaos and there was a complete lack of coordination at the administrative level. We were advised to return back. We went to the District Public Health Officer who assigned us to Gumbda VDC, which is around 70 km via local routed including two days of walking. There was no coordination for transport, food, or medicine support. We went to Aarukhet with our vehicle; after that, the road was blocked due to landslides. No medical team had reached there and the local PHC was totally destroyed. We raise a local health camp, treated patients, provided dressings for wounds, distributed soap and water, provided treatment solutions, and health education for hand washing and sanitation. Adults had multiple cut wounds, nail pricks, fever, and diarrhea. Children were suffered the most, as most of houses were destroyed; they were suffering from fever, cold, pneumonia, diarrhea, scabies, and eczema. We went to Manbu health post after six hours of walking and arranged a health camp and returned.

Conclusions

Trauma, gastroenteritis, respiratory tract infection, and skin disease were the major public health problems. There was complete lack of coordination among medical relief efforts. A disaster management plan has to be formed that integrates transport, electricity, education, health, and all other departments to achieve the best outcome.

Closing remarks

Earthquakes are inevitable. Local governments should make preparation to face these in the future to decrease human casualties and economic losses.

Figure 1. A house damaged by the earthquake in Gorkha district, Nepal.

Figure 2. Wound dressing of an injured patient.

Figure 3. Health camp in Aarukhet.

Figure 4. Our medical team.

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AN ASSESSMENT OF LEADERSHIP TRAINING ON HEALTH SYSTEM PERFORMANCE IN SELECTED COUNTIES IN KENYA
A Quasi-Experimental Study

Authors

Tecla Chelagat, Jim Rice, Joseph Onyango and Gilbert Kokwaro

Introduction

The provision of healthcare services in Kenya was assigned from the national government to the counties in 2013. Evidence suggests that health system performance in Kenya remains poor. The main issue is inadequate leadership, resulting in poor health system performance. However, most training in Kenya focuses on leader (individual) development as opposed to leadership training (development of groups from an organization). The purpose of this study was to explore the impact of leadership training on health system performance in selected counties in Kenya.

Methods

A quasi-experimental time-series design was used to assess the effect of leadership training on health system performance service indicators in health institutions in 19 counties in Kenya. Health workers from these counties had undergone nine-month leadership training, complimented with team coaching based on priority institutional service improvement projects undertaken by the trainees. The comparison group comprised other health institutions within the same counties where health workers had no training on leadership and no coaching during the same period. A total of 31 team-based projects were purposively selected, of which 14 (45%) were from public sector teams, 13 (42%) from the faith-based and NGO sector, and 4 (13%) from the private sector (Figure 1).

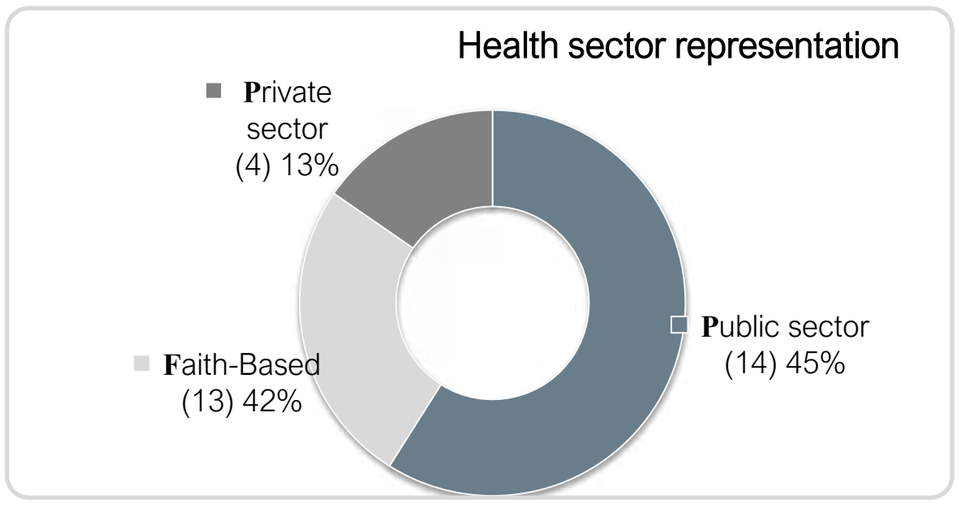

Figure 1. Heath sector representation.

Results

Classification and implementation status of priority challenge projects
Table 1 provides concise statistics for the six main elements. A total of 31 projects aligned to their strategic plans were prioritized by the teams. We clustered the projects according to the WHO health system building blocks (World Health Organization, 2010) for analysis. Service delivery was the most chosen challenging area by the public, faith-based, and private sectors, and human resources, finance, and medical products were the least chosen challenge areas.

Health System Pillar	No and % (project area)	Health Sector			Project's target indicator achieved
		Public	Faith-based	Private	
Service delivery	14 (45%)	8 (57%)	4 (31%)	2 (50%)	13 (92.3%)
Information	7 (23%)	4 (29%)	2 (15%)	1 (25%)	7 (100%)
LMG	6 (19%)	1 (7%)	4 (31%)	1 (25%)	6 (100%)
Human resource	2 (6%)	_	2 (15%)	_	1 (50%)
Finance	1 (3%)	_	1 (8%)	_	1 (100%)
Medical products	1 (3%)	1 (7%)	_	_	1 (100%)
Total	31(100%)	14(100%)	13(100%)	4(100%)	29(93.5%)

Table 1. Challenge projects category and implementation status.

Performance differences between trained and non-trained managers
Figure 2 presents the differences between trained and non-trained managers pre- and post-training. The highest pretest score of the treatment group was service delivery (M = 82.32, SD = 89.20) and the lowest mean was for the medical products (0.00). The highest pretest score for the control group was service delivery as well (M = 50.36, SD = 75.17), whereas the lowest score was for human resource, finance, and medical products (M = 0.00). The posttest scores for both treatment and control groups showed a significant difference. In summary, the highest posttest for the treatment group was service delivery (M = 122.04, SD = 117.97), with human resource scoring the lowest (M = 62.5, SD = 53.03

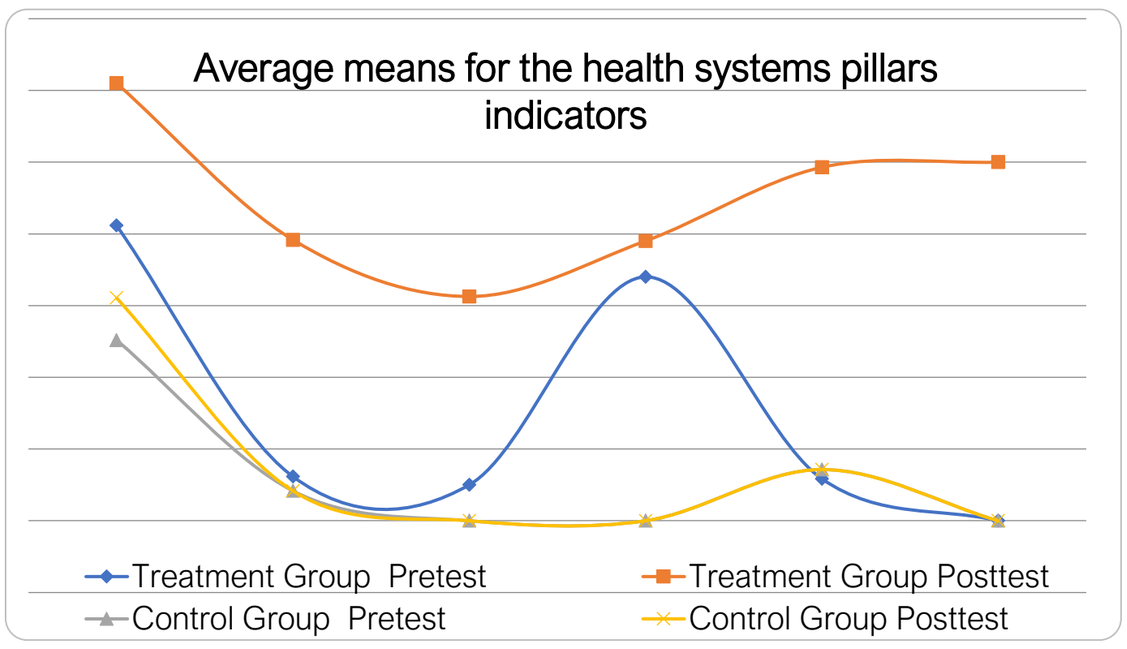

Figure 2. Average means per health system pillar indicator.

Results of t-test
Table 2 summarizes the results of before and after the leadership training program within pretest and posttest scores for the two groups. The pretest scores between the two groups indicate five out of six health system (HS) pillars from the trained group were pointedly different for the non-trained group prior to training. The training had a positive effect on the HS success metrics with posttest performance indicators for three pillars: service delivery, leadership and governance, and information showed substantial variances between the two groups ($p < 0.05$).

	Treatment		Control		Pretest		Posttest	
	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value
Variable	t-test (dependent samples)				t-test (independent samples)			
Service delivery	21.278	0.003	8.271	0.0926	55.343	0.1983	46.2807	0.025
LMG	1.151	0.027	-		5.760	0.9362	3.1174	0.021
Human resource	0.691	0.179			0.530	0.438	0.530	0.121
Information	2.404	0.018			9.1609	0.4822	5.7600	0.020
Finance	-	-	-	-	-	-	-	-
Medical products	-	-	-	-	-	-	-	-

Table 2.. t-test results

Discussions

The positive changes observed, prioritization and implementation of learned knowledge through practice, were attributed to the leadership training. These factors are consistent with the existing leadership development literature (Kwamie et al., 2014; Mansour, Mansour, et al., 2010; Peterson et al., 2011; Seims et al., 2012; West et al., 2015), as evidence by a very high percentage (92.3%) of attained DMR for the priority institutional improvement projects. Service delivery was found to be the highly prioritized healthcare area of concern compared with other health system pillars. Human resources and finance emerged as the lowest areas of priority. The results indicated that incorporating institutional improvement projects and coaching into leadership training triggers immediate application of knowledge to the work environment. Therefore, Kenya needs to invest in leadership and coaching for health workers, together with strengthening other health system pillars (information, financing, human resource development, and medicines and technology) to improve the performance of sustainable health systems.

Conclusions

The findings revealed that the trained managers achieved highly significant desired measurable results compared to non-trained managers. The study, from a practical point of view, deliberated integrating challenge-based methods to boost the transmission of newly learned leadership skills and knowledge through practice.

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MHM EDUCATION WITHIN THE FRAMEWORK OF A WASH SCHOOL INTERVENTION IN LUANG PRABANG PROVINCE, LAOS

Authors

Gabriela D. Zipper[1,2] and Luang Prabang

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Introduction

In Laos, understanding of menstruation is lacking, and prevailing social norms consider menstruation shameful, making it difficult to share knowledge in schools and homes. In order to address the needs and barriers around menstruation, menstrual hygiene education was introduced as integral part of a water, sanitation and hygiene programme in 10 lower secondary schools in Luang Prabang Province in Laos, targeting a total of 4'659 students. For MHM, 24 teachers and 12 nurses were trained as facilitators reaching out to 1'758 girl students.
The project demonstrates how the introduction of Menstrual Hygiene Management (MHM) in schools has a positive effect on knowledge, attitudes, and supporting a more open and enabling environment for MHM.

MHM Trainings for girls © SRC

Methods

656 students (15% of the target population) were interviewed during a baseline Knowledge, Attitude and practice (KAP) survey right at the project start on issues concerning water, sanitation, hygiene, nutrition and menstrual hygiene. MHM workshops were provided to girls and male and female teachers in targeted lower-secondary schools since 2017. Information from girls was compared through pre- and post-tests during workshops and repeated annual Knowledge, Attitude and Practise (KAP) surveys.

Results

Pre- and post-test comparison showed that 98% of participants improved knowledge and attitudes of MHM with an average improvement rate of 49% on a six-point scale. After workshops with students, 93% of the girls said that they would seek advice on their first menstruation (69% pre-workshop), 97% thought they were able to attend school when menstruating (85% pre-workshop), 92% indicated understanding of MHM in relation to reproduction (65% pre-workshop), and 95% indicated understanding of the age and duration menstruation usually occurs (52% pre-workshop).
Baseline and midterm surveys confirmed these trends. At midterm, 65% of girls said they sought information from a teacher when they had their first period (0% baseline), 56% said they would speak to someone before their first period (35% baseline), and 87% said they received peer-to-peer education from other students (11% baseline).. In general, girls who already had their period at time of interview, had better knowledge. However, results also indicate that repetition and continuous education is useful, as some post-workshop results have dropped again at midline survey. Knowledge around the physical changes and reproduction remained low.

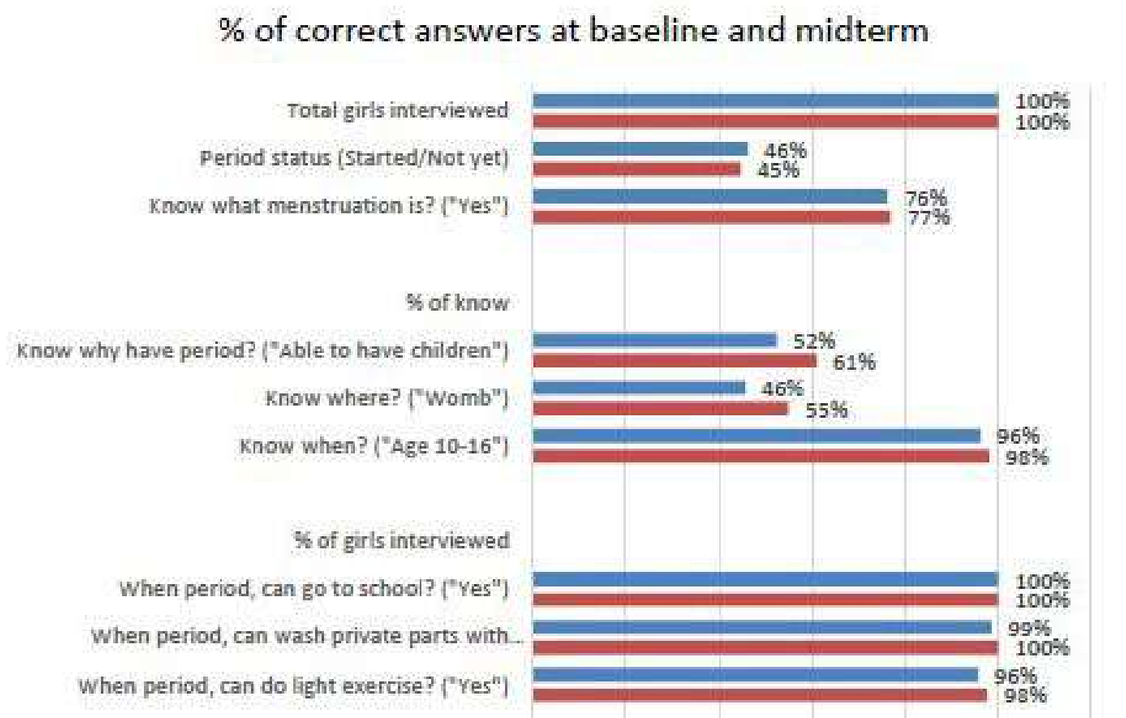

Figure 1. Comparison of baseline and midline KAP survey of girls, who already had their period.

Integration of MHM into school WASH contributed to creating an enabling environment for MHM. This has laid a strong foundation for future sensitization of boys and girls towards MHM and beyond, resulting in expansion to other reproductive health topics for young people.

Classroom trainings by Red Cross staff
© SRC

Conclusion

MHM education is much appreciated by the teachers and students. It also helped to involve local health workers and acted as a door-opener for young people to seek services at the local health center.
Since knowledge on physical changes and relation to reproductive health did not improve a lot, the project will focus more on reproductive and adolescent health in the future. MHM prepared conducive ground for more "sensitive" topics to be addressed at school and to include men and boys in the discussions.

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SAFE MOTHERHOOD REVOLVING FUNDS

Are They Really Life-Savers for the Poor? Practices and Impact in Nepal

Authors

Anju Gautam, Raj Kumar Khsetri and Tulasa Bharati

Nepal Red Cross Society, Nepal

Introduction

The maternal mortality ratio of Nepal declined significantly from 539 in 1996 to 239 in 2016 (MMR Asia-Pacific is 127/100,000 and SDG 79/100,000). Swiss Red Cross in collaboration with Nepal Red Cross Society implemented Safe Motherhood Revolving Funds (SMRF) in five districts (Dang, Rolpa, Rukum, Jajarkot, and Dolpa) in 2015 and 2016. Health mothers groups (HMGs) are anchored in the community and led by local Female Community Health Volunteer (Government staff) as part of Nepal's health policy. The HMGs were facilitated by the project or inactive HMGs reformed. Then they were trained in fee collection, fund operation, simple accounting, record keeping, and monitoring the disbursement of the fund to women in need for safe motherhood services. At the time of study, 163 HMGs autonomously ran the funds.

Aim of the study

To enhance the understanding of the functionality and sustainability of the SMRFs for safe motherhood and its potential for scale-up and integration in government policy.

Paying for the transport costs to the distirict hopsital was possible through a loan from the SMRF. © SRC

Methodology

Focus group discussions (FGD) , semi-structured questionnaire surveys and key informant interviews (KII) were conducted with members of HMGs with SMRF, household heads of general community members, health facility in charge, and district (public) health officers. Of 163 HMGs in the project area, 66 HMGs were enrolled in the study based on prevalence (p) = 50%, sampling error (d) = 10% at 95% CI and non-response rate = 10%.

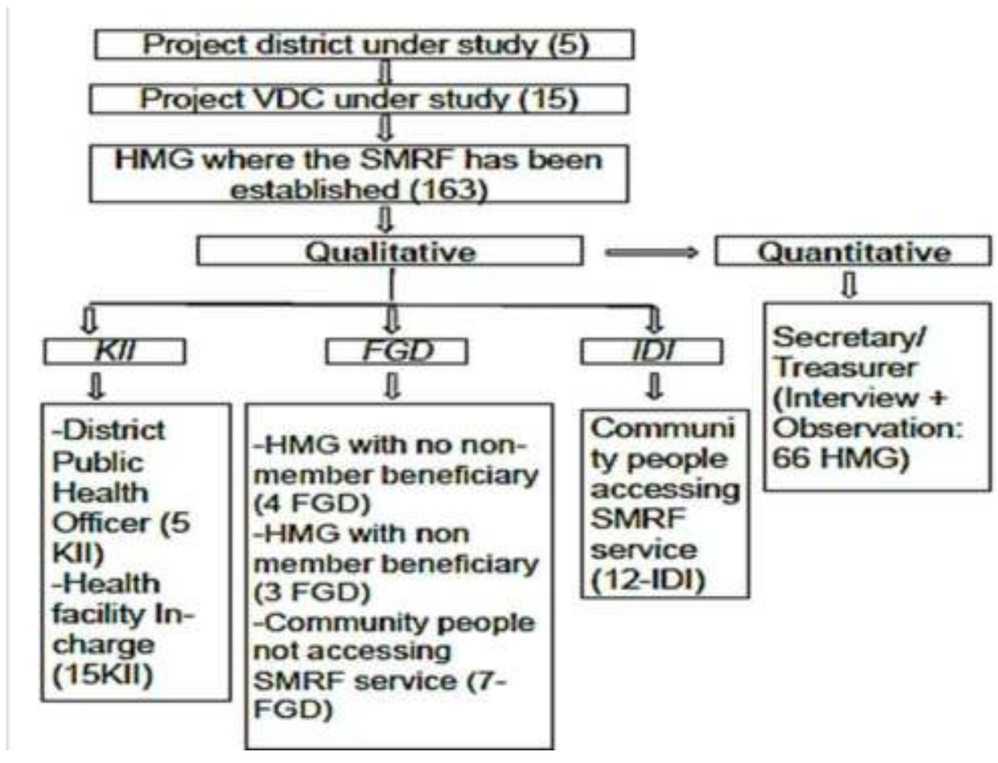

Figure 1. Study sampling frame.

District health offices have appreciated the funds. Some local municipalities have started to include them in their local policy.

Health mothers groups collecting the monthly fees for the safe motherhood revolving fund © SRC

Results

- 94% of all HMGs collect monthly revenue and maintain a separate register for record keeping.
- 36% of groups maintain a SMRF and a separate savings and credit loan. However, only 32% of groups receive financial contributions outside their own members.
- Fund use has increased from 77 women in the first year to 456 in the second year and 833 at the time of study.
- 38% of disbursements at a time are between NRS 5000 and 10,000 (USD 50– 100); 40% of disbursements are less than NRS 5000.
- Payback time varies between three months to one year. The default rate is 6%, but groups reported that they can recover the default.
- All groups reported that the group autonomously decides about the interest rates, administration, and distribution of the fund to eligible women.
- SMRFs have contributed to group cohesion and increasing members.
- More than half of the HMGs (57.6%) are also using the fund for issues other than safe motherhood.
- All HMGs state that the poor and vulnerable have access to the fund. However, only 44% of HMGs support non- members.

HMG members visiting a mother at home after a safe delivery. © SRC

Conclusions

- SMRF allows people to pool and borrow money in obstetric emergencies thus improving access and utilization of health care services.
- SMRF is successfully continued and self-managed by the HMGs.
- However, due to low literacy level of HMG members, the groups require support/facilitation in better account keeping.
- Scope remains to determine membership and allowing borrowing of higher sums to reach regional hospitals.
- Equity and social inclusion remains an issue to be addressed to increase participation of those women who can not financially contribute.
- Scope remains to increase local fundraising outside "members".

Recommendations

- SMRFs inclusion at federal-level policies should be encouraged further.
- More research into the type of obstetric and other medical emergencies averted through SMRFs is needed to establish a possible relation and contribution to reducing the maternal mortality rate in Nepal.

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Nepal Red Cross Society

Swiss Red Cross

MENTORING AND SUPERVISION: A KEY COMPONENT TO ENSURING QUALITY PRIMARY HEALTH CARE SERVICES IN RAJSHAHI AND NAOGAON DISTRICTS IN BANGLADESH

Authors

Farhana Akhter[1], Shanta Ghatak[1] and Akramul Haque[2]

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[2] DASCOH Bangladesh

Introduction

The primary healthcare system in Bangladesh delivers an essential service package (ESP), which encompasses maternal and newborn care, integrated management of childhood illnesses, immunization, family planning, nutritional service, screening of non-communicable diseases, first aid, and general health issues. After initial training, health providers are often left alone to put theory in practice, subsequently compromising the quality of care. To help the health service providers to deliver quality maternal neonatal and child health services (MNCH), DASCOH, a reputed NGO, in collaboration with the Swiss Red Cross, initiated on-the-job supervision and mentorship[1] intervention carried out by the relevant government health authorities and project staff to enhance the service quality of 70 primary health care facilities.

1 Key Definitions:

Technical Supervision is the monitoring of health service accessibility according to the government guidelines; availability of basic amenities within the health facility; appropriate guidelines/SOP; essential equipment, drugs, and supplies; and completeness of service register.

Technical Mentorship is the monitoring of health service providers following the correct diagnosis and treatment protocol, and to provide on-the-job coaching to the health service providers to improve their performance in delivery of quality services.

Methodology / Strategies

A quantitative supervision and mentorship checklist was developed and piloted together with the government in 14 community clinics (CCs). After the successful pilot intervention, the checklist was applied on a monthly basis in 49 CCs and 21 union health and family welfare centers in Rajshahi and Naogaon district. The checklist consisted of an array of tasks from a brief history taking up to examination and record keeping a health provider has to perform during consultation. Fulfilment of the tasks in a correct manner aimed at improving quality of care. Data were collected and evaluated over a period of two years.

Figure 1. Project intervention areas in Bangladesh.

Advocacy Impact

DASCOH introduced mentorship and supervision tools to enhance the quality of services in the CCs. After development and piloting operational tools with the government's health line directorates in 14 CCs, the mentorship and supervision activities were integrated by the government of Bangladesh to monitor maternal, neonatal, and child health services. To implement the tool, DASCOH obtained the legal approval for the checklist on behalf of the Directorate General of Health Services. Accordingly, DASCOH and the government of Bangladesh have committed to taking equal responsibilities in implementing the checklist at the CC and union health and family welfare centers.

A DASCOHs upported Community Clinic
© SRC

Results

A total of 752 supervision and mentorship visits were conducted both by project staff and government health officials between 2017 and 2019. The data of Rajshahi district indicated a 20% service improvement through supervision and mentorship visit in the CCS, and at union health and family welfare center level, a 12% service improvement was noted through supervision and 9% through mentorship visits. In Naogaon district, 23% service improvement was achieved through the supervision system in the CCs, and 35% by mentorship visits. At the union health and family welfare center level, a 37% service improvement was achieved through supervision and 36% by mentorship visits.

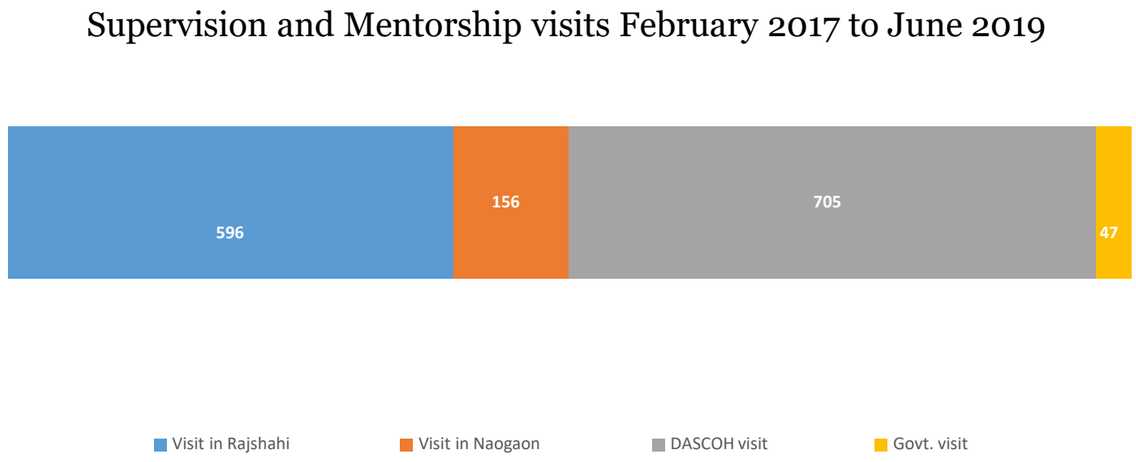

Figure 2. Supervision and Mentorship visits February 2017 to June 2019.

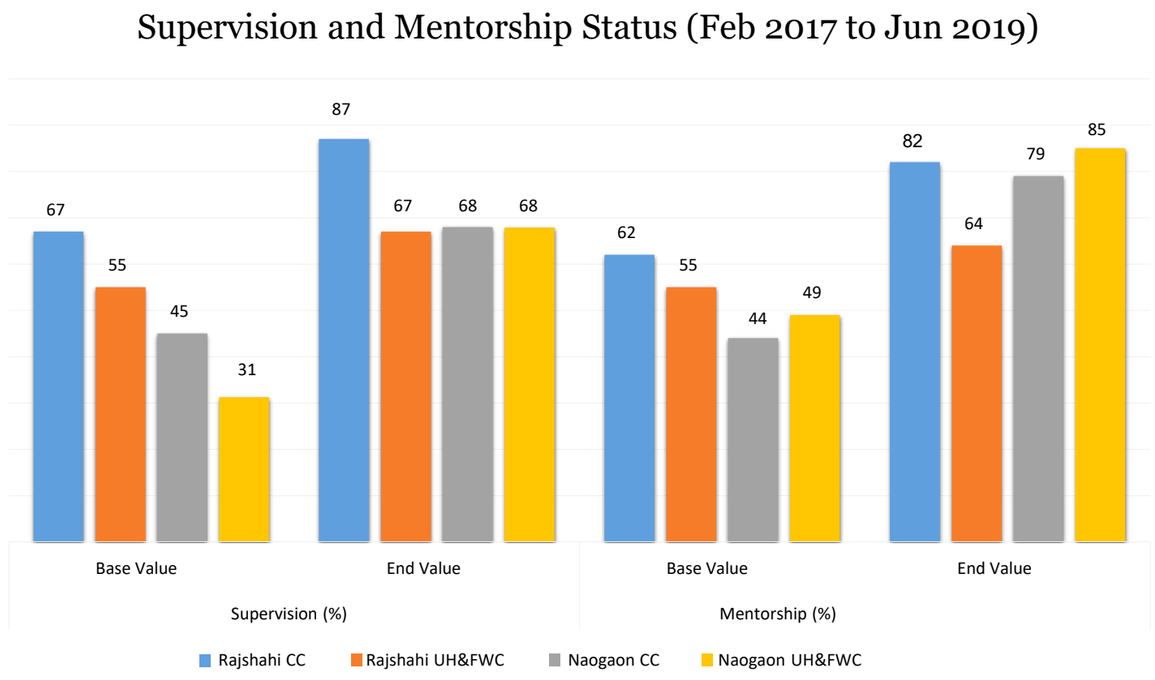

Figure 3. Supervision and Mentorship Status (February 2017 to June 2019).

Conclusion

The project initiative proves that mentoring and supervision can produce lasting improvements and perceptible changes in generating quality service in the government health facilities. It also effectively demonstrates that this mechanism can be integrated into the primary healthcare system. While the supervision and mentorship appear to be effective, it needs to be organized more rigorously and better integrated into future plans and government budgets. More research is required to assess the long-term effectiveness of the supervision and mentoring process as well as to elicit other barriers for quality improvement.

Data Source: DASCOH MIS
For more details visit www.dascoh.org

GIRLS' MHM KNOWLEDGE, ATTITUDES AND PRACTICES, INFLUENCING FACTORS, AND THE ROLE OF BOYS:

Findings From Malawi

Authors

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Introduction and aim

Menstrual hygiene management (MHM) is an intricate and still poorly understood phenomenon, especially in many contexts in sub-Saharan Africa. We sought to enhance the understanding of the relationship between knowledge, attitudes, and practices (KAP) and factors influencing MHM in girls in Malawi and to explore the role of boys' knowledge on MHM dynamics, a widely neglected aspect to date.

MHM education under a tree

Girl-friendly toilet in a school in Mazimba district © SRC

Methods

The mixed method study combined a cross-sectional survey (n = 522), 29 focus group discussions (n ≈ 200), and key informant interviews (n = 13). The research involved pupils (standard 8) from 17 primary schools in two districts (Mzimba and Salima) in rural Malawi.

Self-made reusable sanitary pads © SRC

Results

The onset of menstruation was a negative experience to most girls (85%); 52% had never heard about menstruation before. Girls had significantly higher levels of MHM knowledge than boys ($r = 0.43$; $p = 0.000$) and girls' knowledge was positively linked to a sister ($r = 0.30$; $p = 0.000$) or a mother group ($r = 0.36$; $p = 0.000$) as their source of information. School attendance during menses was higher in girls with more knowledge ($r = 0.22$; $p = 0.002$) and associated with the use of commercial sanitary pads ($r = 0.30$; $p = 0.000$). Boys' knowledge was connected with higher levels of teasing, resulting in girls' school absenteeism during menses ($r = -0.21$; $p = 0.003$). KAP, primary sources of knowledge, and absenteeism differed significantly between districts.

Conclusion

The onset of menstruation presents a tabooed challenge for Malawian girls. The linkages between girls' school absenteeism and boys' MHM knowledge suggest, however, that breaking the taboo can initially expose girls to more harassment and increase their levels of discomfort, which needs to be addressed sensitively. Educators are thus required to address this topic in very sensitive ways. The study results indicate the scope for MHM and SRHR. Differences in districts call for context-specific MHM solutions.

Individual counselling helps overcoming shyness © SRC

"MHM education lifts a tabooed challenge for Malawian girls."

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RAISING CHRONIC DISEASE PATIENTS' SELF-EFFICACY: PILOTING A CHRONIC DISEASE SELF-MANAGEMENT PROGRAMME IN RURAL MOLDOVA

Results From a Pilot Project in Five Rural Localities

Authors

Diana Berari[1], Nicolaj Holm Ravn Faber N[2], Florence Secula[3,4], Constantin Rimis[1], Ala Curteanu[1] and Helen Prytherch[3,4]

Introduction

High rates of chronic diseases in Moldova have a significant morbidity burden on the population and impact patients' quality of life, particularly in rural areas with lower access to health information and services.

Our study aimed to assess the acceptability and impact of a pilot Chronic Disease Self-Management Programme (CDSMP) on patients' self-efficacy in five rural localities of Moldova.

For 6 weeks between March and April 2018, groups of patients guided by two trained peer facilitators, engaged in workshops emphasising individual planning and action-taking to achieve lifestyle changes. The pilot intervention was implemented in the localities of Susleni, Boscana, Peresecina, Ohrincea and Marandeni.

Methods

The pilot CDSMP was evaluated between March and May 2018 using mixed methods. The CDSMP six-item self efficacy scale questionnaire was administered before and after the intervention to assess impact. A focus group discussion (FGD) with facilitators and a satisfaction questionnaire with patients (adapted from an instrument developed by the Danish Committee for Health Education) were implemented after the intervention.

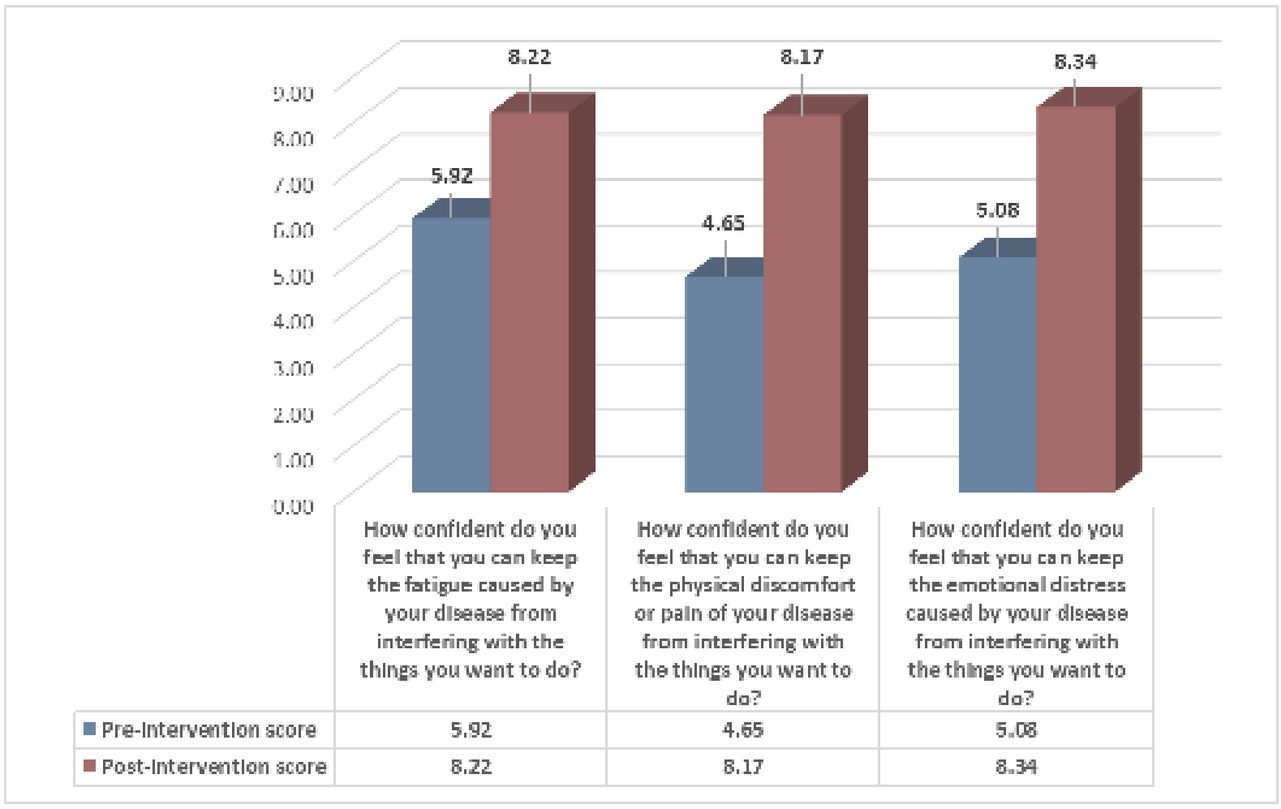
Results

The pre-intervention self-efficacy questionnaire was administered to 63 participants at baseline vs. 59 participants at endline- as 4 participants dropped out. The FGD included the 10 facilitators. The participant satisfaction survey was completed by 59 participants. The participants included 55 women and 4 men.

Evaluation results revealed a statistically significant increase of participants' self-efficacy score, from 5,33 before the intervention to 8.32 after the intervention (paired-sample *t*-test).

Participants' satisfaction was high, with on average above 96% of respondents satisfied with content, format and delivery elements of the intervention.

The FGD revealed the importance of adapting language and content to participants in the Moldovan context. Facilitators highlighted a gradual shift in content of participants' individual actions plans as the workshops progressed, with increasing importance being given to psycho- emotional elements such as communication and stress management, while nutrition-related goal setting and action plans remained stable throughout the intervention.



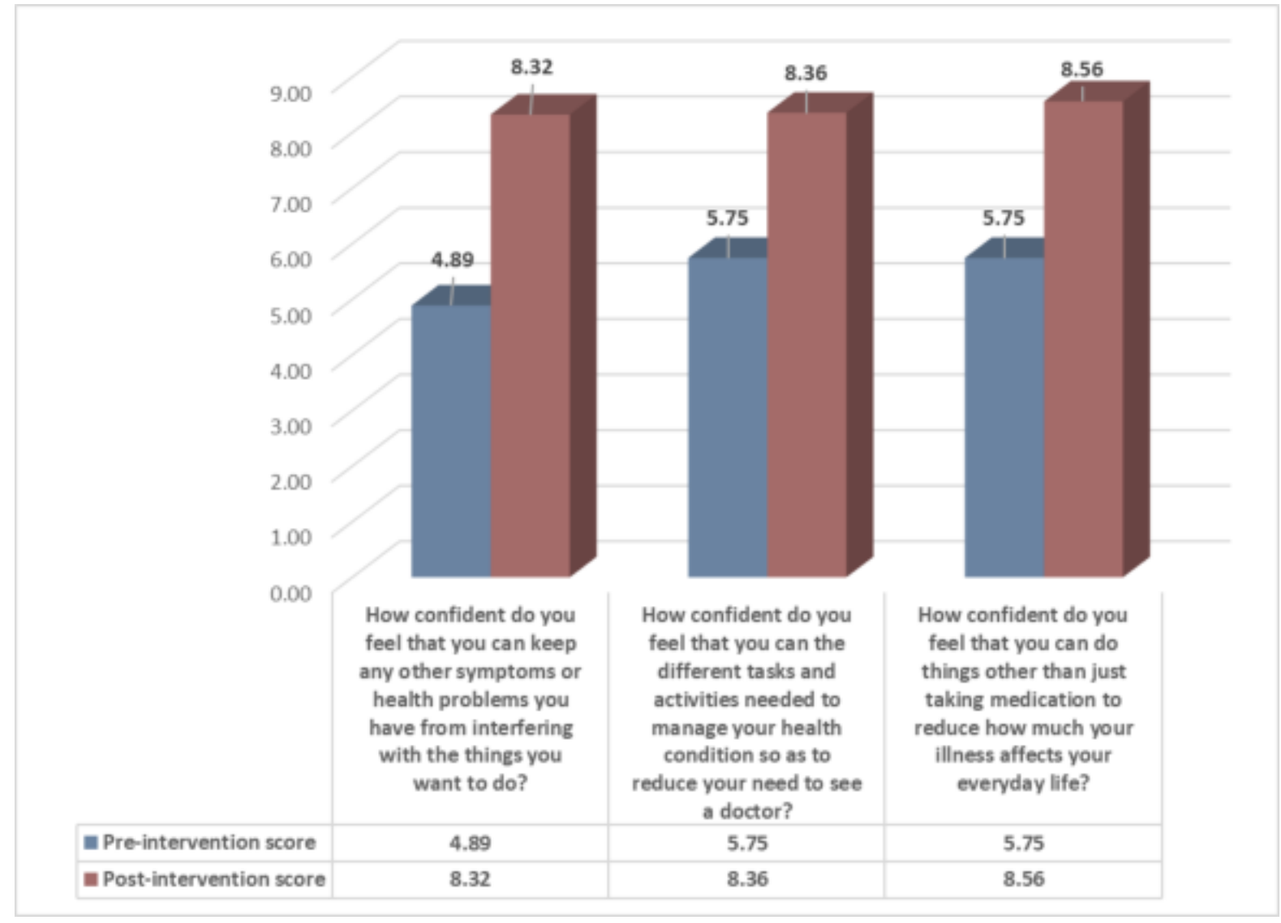


Figure 1. Pre and post intervention self-efficacy scores on 6 items.

Conclusions

The CDSMP is an acceptable intervention in the Moldovan context provided that cultural adaptation is done to match the participants' characteristics. Increases in participants' self-efficacy after the CDSMP were demonstrated, suggesting it is a relevant intervention for the target population. The CDSMP is based on behavior changes techniques such as goal setting, social support, self-monitoring and feedback which are proven to be the most effective techniques for lifestyle behaviour change.

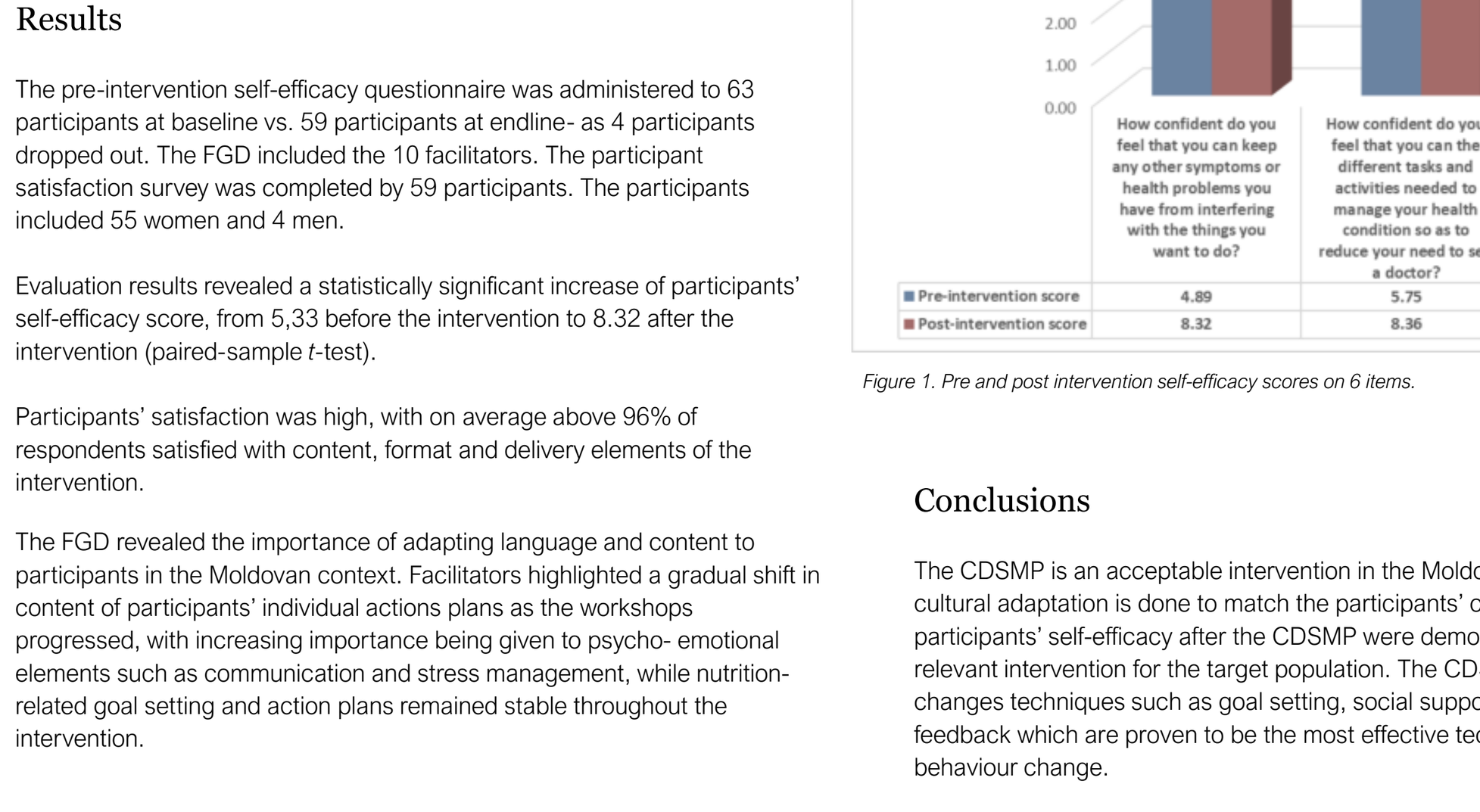


Figure 2. CDSMP participants practicing physical activity, Healthy Life - May 2018.

Affiliations

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HEALTHY LIVING HEALTHY AGEING: FIELDWORK METHODOLOGY FOR VITAMIN D ANALYSIS

Authors

Keila Valente de Souza de Santana, Sofia Oliver Lizarralde, Helena Ribeiro, Karen Charlton and Susan Lanham-New

Introduction

Vitamin D plays crucial role in metabolic processes ranging from calcium and phosphorus metabolism to cell maturation and growth[1]. Recent studies have shown high rates of vitamin D deficiency due to the behavior of avoiding the sun, the low consumption of foods rich in vitamin D, and the high prevalence of overweight and obesity. Job occupation and religious differences in clothing in temperate countries have also shown a direct relationship with the duration of skin exposure to the sun and correlate with vitamin D concentrations.

Objective and Methodology

This work is part of the multicenter project Healthy Living Healthy Ageing, developed by three universities (University of São Paulo, University of Surrey England, and University of Wollongong Australia) that are part of the Universities Global Partnership Network. The aim of this project is to investigate differences in vitamin D levels, vitamin D intake and lifestyle (including sun exposure) between countries, and to determinate associations with mental health.
For this it was necessary to collect data on the vitamin D levels, sun exposure, diet and lifestyle of 100 women in each country. The participants were screened according to exclusion criteria, such as potential cofounders likely to affect vitamin D metabolism (osteoporosis therapy, diabetes treatment, hypertension drugs, cancer treatment), and taking supplements containing vitamin D.
The aim of the manuscript is to describe the fieldwork methodology conducted in Araraquara (Brazil) by the University of São Paulo to collect these data. The paper reports the steps for data collection. This was used as a parameter followed by other countries participating in the project.

Project advertising and recruitment

Informative posters were placed in local Primary Health Centers, churches, universities, gyms, beauty salons and clubs. Multiple communication channels were used for the project's diffusion and participant's recruitment, such as local radios, social media, and interview for local TV.
The first aim was to recruit women 55 years of age or older, but due to difficulties in reaching the sample size, the age for participation in the project was lowered to 35 years or older.

Figure 1. On the left the poster used to advertise the project. On the right the instructional poster on vitamin D deficiency.

Participants reception

A lab's experienced technician collected blood samples and the circulating serum 25-hydroxyvitamin D level from 101 women aged 35 + in a Health Center at the University of Sao Paulo. The blood samples were analyzed by the chemiluminescense method.

Figure 2. Photos of the participants` reception.

Questionnaires

Participants answered self-administered questionnaires about lifestyle, sun exposure, physical activity, and general health at the same place and in the same day, supervised by the project team.

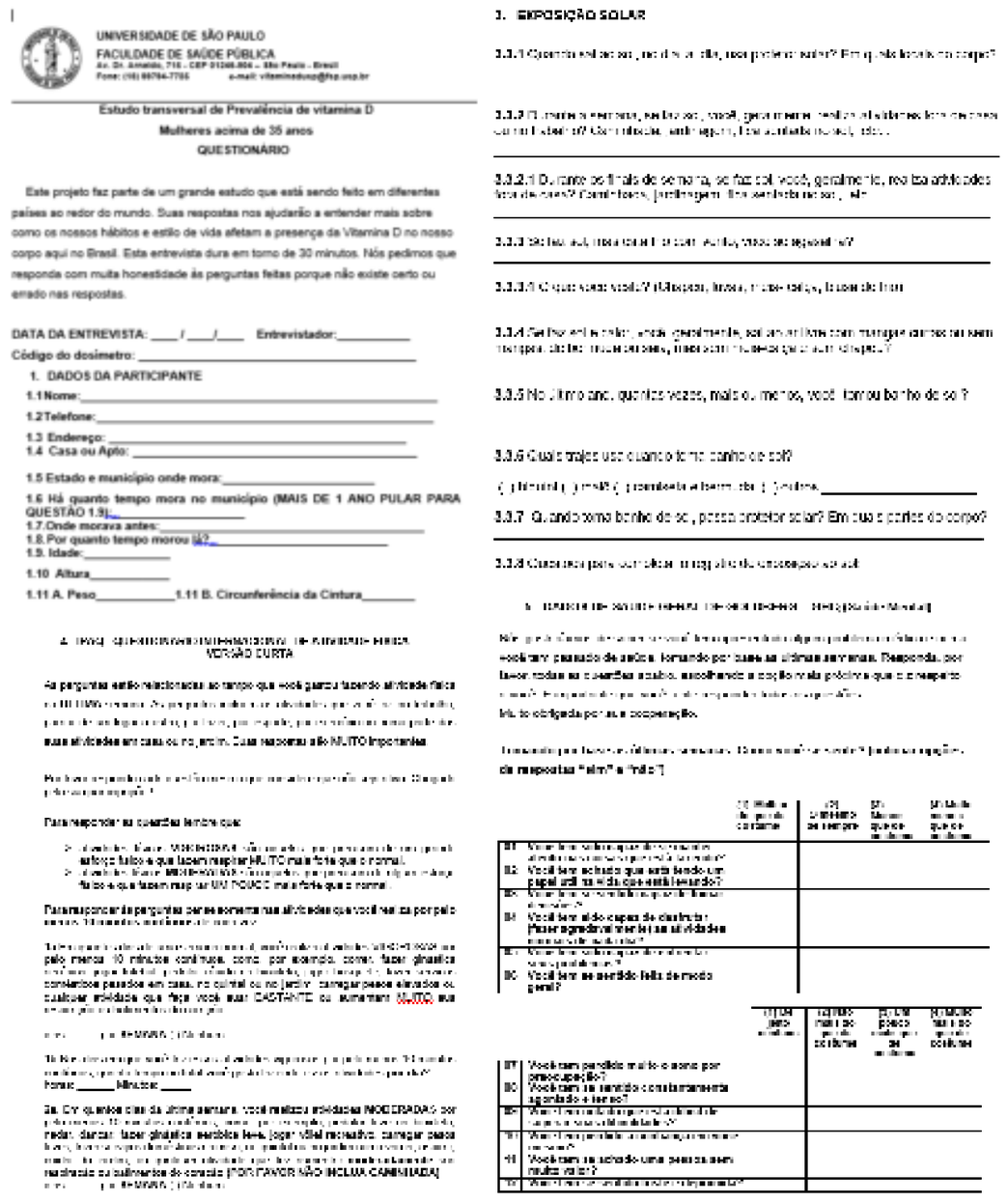

Figure 3. First sheet of questionnaires applied to 101 project participants.

Sun exposure and food diary

The participant's exposure to UV radiation levels were measured by a solar dosimeter (polysulphone badge and sheet), provided by the University of Manchester, UK.
The badge measures the Standard Erythema Dose SED (1 SED equals to 100jm^{-2} of ultraviolet radiation) and it was used on clothes for four days (the same as the food diary), including weekdays and weekend.
We distributed sealed envelopes to participants for returning the badges and the food diaries to the university. Only 5% did not return.

Figure 4. On the left a polysulphone badge and sheet and on the right a food diary.

Preliminary results

Currently, there is no universal consensus on the optimal concentration for plasma/serum 25-hydroxyvitamin D (25 (OH) D). The IoM USA defines vitamin D deficiency as a plasma/serum 25 (OH) D status below 12 ng/ml (30 nmol/L) and insufficiency as a 25 (OH) D status below 20 ng/ml (50nmol/l)[1].
Most women were white (72,3%), followed by brown (15,8%) and black (9,9%) (Table 1). Asian and indigenous were only 1% of the sample.
More than half of the white women, 52.1%, had sufficient levels of vitamin D and 15.1% insufficient. Among black women, 90% presented sufficiency. More than 60% of the brown women had sufficient levels of vitamin D, 25% were insufficient and only 12.5% had ideal levels. All the women received the results of their exams within 2 weeks. We referred participants to a medical doctor if the blood test result was below 20 ng/ml.

Color	Participants (n)	Insufficient	Sufficient	Ideal[a]
White	73	15.1%	52.1%	32.9%
Black	10	0.0%	90.0%	10.0%
Asian	1	0.0%	100.0%	0.0%
Indian	1	100.0%	0.0%	0.0%
Brown	16	25.0%	62.5%	12.5%
Total	101	16%	58%	26%

Table 1. Level of vitamin D according to skin color. [a] Some authors defend an ideal plasma/serum 25 (OH) D status above 30 ng/mg (75 nmol/l).

Future Perspectives and Conclusions

All blood samples collected by the partners of the multicenter project will have their levels of 25-hydroxyvitamin D analyzed by gas chromatography and spectrometry in a single laboratory at the University of São Paulo. Association analyses are being carried out with the data obtained through questionnaires, food diaries and solar dosimeters in the R program. The data show an association between profession and level of sun exposure. Older women (50+) showed higher levels of vitamin D than younger women (50-). White women had higher levels of vitamin D than brown and black women. Women with distress symptoms had lower levels of vitamin D. The results of this paper can be parameters for other population recruitment studies for vitamin D analysis.

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[1] Institute of Medicine (US), Committee to Review Dietary Reference Intakes for Vitamin D and Calcium, editors. Dietary reference intakes for calcium and vitamin D. Washington, DC: The National Academies Press; 2011.

PATIENTS, ACTOR IN DECISION AND POLICY MAKING IN ALBANIA

Patient Approaches and Challenges in the Health System

Authors

Qamil Dika and Marsida Duli

Patients and the Albanian Health System

In Albanian health system, patients are organized in associations that represent their rights since 1992, but they are small one, they do not have infrastructure, financing, collaboration of the institutions, representing in collegial decision making bodies. In general association that represent patient rights are paid by pharmaceutical
companies or different projects. They act locally and do not interact nationally or in international level.
In Albania different politicians argues that patients would be in the center of health system but they do not consult their needs and they act without them. They politics in general are not transparent and do not inform patient community for the impact that they would have. It is clear that during last 3 decades was no will from they who lead Albanian health institution to change the reality in patients favour. Also patients have weak selforganization.

The role of patients in a health system

1. They are contributors to the health system through the payment of health insurance and taxes.
2. Patients are consumers of the health system and
the services it provides.
3. Patients/citizens in general should be involved in
decision-making in the collegial bodies of administration of health care institutions, as it has been practiced for many decades in Western countries.
4. Patients/citizens have a very important role to play in providing health care, as partners of health
systems because they have to contribute to self-medication of pathologies.

Figure 2. The role of patients in the health system.

Participation and Decision-Making of Patients in the Albanian Health System, findings.

1. After about 30 years of transition of the Albanian society and the health system, we find that the patients are not the "owners" of the health system.
Since 1992, with the change of the political system in Albania, they have managed to gain the right to selforganization, but if we refer to their representation, we notice that they do not benefit sufficiently, much less qualitatively.
Patients' associations:
• are few in number, generally segmented on the basis of certain diseases (e.g Diabetes Association; Thalassemia Patients Association, etc.),
• are organizations that do not have the necessary infrastructure,
• are few or not at all financially supported,
• they operate in limited territories, thus not representing the interests of patients in peripheral or rural areas,
• do not interact with other international institutions,
• from time to time we notice their mercenarization by pharmaceutical companies thus serving the interests of them to be included in the list of reimbursable drugs.
2. There are only two institutions in which patients are represented in Albania (except for patient associations), the Durrës Hospital Board and the Administrative Council of the Compulsory Health Insurance Fund. Patients are uninformed about decision-making in the health system and there is no transparency in accessing information on their part. Patients cannot access accurate information on the budget spent on the health system, they also have difficulty accessing data on their medical treatments other issues administered by health care institutions.
3. The current situation is not only a matter of the health system but also a matter of culture of our society. Our patients do not have full confidence in the medical staf, result of the numerous problems faced by the medical staff of a health system in many difficulties, Albanian patients have recently manifested increased cases of tension in their relations with the medical staff.
4. According to the annual report of Power House, Albania ranks last in the European ranking of health systems, in 35th place with only 544 out of 1200 possible points. Among the special chapters of this assessment is the information and rights of patients. In this section, Albania is ranked with the lowest possible scores.

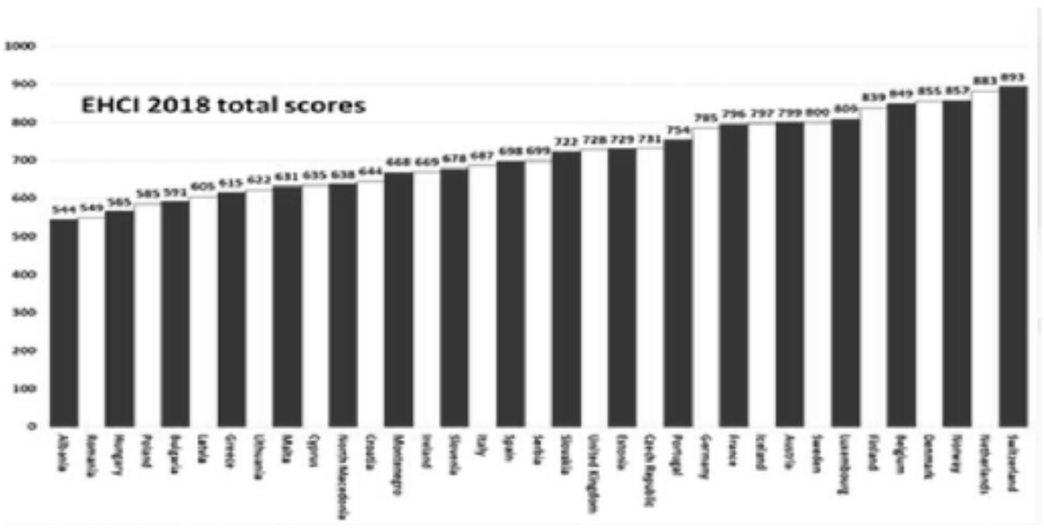

Figure 6. European Health Consumer Index 2018, (Albania ranks 35th with 544 points, the last).

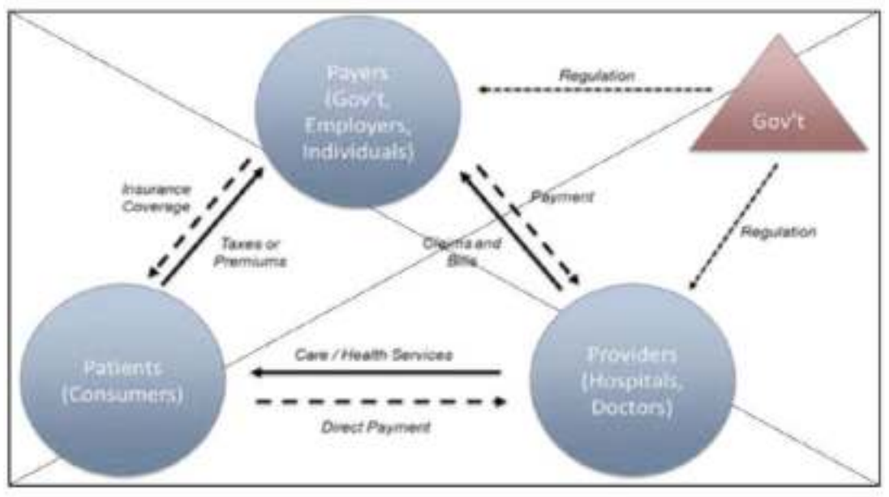

Figure 1. Report of patients with other state structures in the health system.

The benefits of Patient empowerment

• Patients of course are the direct beneficiaries of this empowerment.
• Physicians will not only experience a less stressful situation in their relationships with patients, but their empowerment also means qualified "collaborators" in the application of medical procedures and more care on the part of patients / citizens for preservation of their health.
• The Public Health Sector is one of the beneficiaries because not only the citizens better informed about their pathologies, but also trained or educated in their management, will be a contribution to reducing the indicators of morbidity in the population and increasing life expectancy of patients carrying certain pathologies as a result of patient empowerment.
• The health system is not only interested in supporting patients but the main purpose of a health system is to serve the citizens who at some point in their lives will definitely access the services provided by the health service. All health systems aim to achieve the best possible results in terms of patient service, so its empowerment means a more efficient system.
• The society in an efficient system, itself would not only have more health but also save money which is mismanaged or misused properly to invest them in other sectors.

The enhance of the role of patients in decision making is a patient revolution, and a central priority of the health policy and political will to consider them as real actor and create them the needed infrastructure and financing.

Recommendations

• Improving the health system is first and foremost a matter of political will. Because it requires: more funding, good administration, transparency, strengthening the role of patients, reforming the health care sector at all three levels, further development of the hospital as an institution, reforming the pharmaceutical sector, strengthening public health, including the dental care sector in the health insurance scheme and many other elements no less important, but this improvement never will be complete if we do not have a "revolution" from the patients themselves to seek more quality and right.
• Empowerment of the patient is a democratization process and the result would be the decentralization of health system, the transfer of power or competencies from managers who in Albania manifest a marked lack of skills and prominent politicization, towards patients, which is the main goal of reforming the health system, putting the patients at the center of health system.
• Among the main goals of health policies must include information, education and communication as opportunities to strengthen interaction with stakeholders, among whom the main ones should be the patients.
• Health policies and decision-making of health care institutions should at least be consulted with patients. So the will of the leaders of the health system must be clear to change this culture of irresponsibility for the treatment of patients.
• Increasing cooperation with medical staff, in terms of informing patients and treating them with more human dignity but also stimulating staff to provide better quality medical care would greatly serve this not at all normal situation in the relationship between doctors and patients.
• Tightening of the criminal code in cases of tension between patients /citizens and medical staff.
• Patients associations themselves need:
- ✓ more funding for the activity of their associations,
- ✓ more infrastructure to develop their activities,
- ✓ more cooperation at local, national and international level,
- ✓ to educate them on their rights and responsibilities,

to:

- ✓ mobilize other patients and citizens,
- ✓ seek more information and transparency from the heads of institutions,
- ✓ monitor the manner and the time of implementation of certain promises or policies that affect the health system.

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A PROJECT TO IMPROVE MENTAL HEALTH CARE IN TWO SMALL CENTRES IN KENYA (MERU COUNTY AND THARAKA-NITHI COUNTY)

Author

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Geneva University Hospitals

Introduction

The aim of this study to share a project to improve mental health care in the areas of two little missionary facilities in Kenya (Chaaria Cottolengo Missionary Hospital, in Meru County and St Orsola Consolata Missionary Hospital in the County of Tharaka-Nithi). The ambition of this project is to offer to the local population the possibility to receive mental health care in the local community facilities and not to be obliged to move to some other far urban centres.

Methods

The author was involved in a programme of assessment of the situation of mental health care in the catchment area of the two facilities.

- The initial assessment was performed directly in situ in two ways: through informal interviews of relevant stakeholders (general and medical directors, chiefs of nurses, medical doctors, volunteers, NGO's director, patients) and by workshops followed by clinical meetings in the two hospitals.

- Unstructured interviews were performed to collect general information about mental health care; we chose this kind of interview because is supposed to help develop flexibility and thrust and building of an egalitarian relationship between the investigator and the interviewees.

The workshops were organized with people working in the hospitals to share the knowledge about the current situation of care of mental health condition as well as their concerns. They were open to all the professionals, but medical doctors and clinical officers were the main participants.

The focus of the interviews and of the workshops were the perceived needs and difficulties in term of mental health care, the management of the current situation with analysis of the strengths and the weakness of the existing system, and resources and ideas to improve.

Specific attention was paid to the difficulties and criticisms linked to the use of a Western taxonomy system in an African context. In order to pursue and to develop the discussion on main topics of mental health care, the investigator proposed delivering two brief presentations about two pathologies (depression and schizophrenia) to share knowledge, differences in presentations, and care of these disorders, and to compare different experiences.

Afterwards, a clinical meeting took place, starting with many presentations of clinical cases by local doctors and clinical officers to share practical difficulties, challenges, and propositions.

Some reflections:

1. The importance of training in mental health for all health professionals.

2. The importance of global assessment of mental health, especially for vulnerable populations, such as young, women, and elderly.

3. Ensuring access to care and welcoming of help-seeking behaviours.

4. The opportunity given by the collaboration with traditional healers.

5. Share information and reach the patients.

Closing remarks

Finally, we would like to share our concern about how to adapt our Western psychiatric knowledge to a rural African context, to its particularities, empowering the local stakeholders and keeping a respectful attitude.

As highlighted by B. Saraceno (Saraceno, 2019), exporting treatment packages, even when they are of good quality, is no longer enough: we must adapt to the local context and help develop an optimal policy to reduce the treatment gap.

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The author would like to express special gratitude to all the participants who accepted to be involved in the survey. In particular, for their precious contribution, they sincerely thank: Dr G. Gaido, Dr. A. Mbungu, Mr. P. Mati Nchori, Mr. J. Mutugi Gaichu, Mr G. Chiesa, Mrs R. Drago, and Dr A. Bernardi.

HEALTH CARE PROVIDERS ALSO HAVE A CULTURE

How Cultural Health Beliefs of Health Care Providers in the Interior of Suriname Relate to Their Delivery of Health Care

Author

Celine Duijves

Introduction

Culture influences the ways in which people perceive and deal with health. While much research has focused on culture in relation to patients, much less is known about how the culture of health care providers affects their professional work. This study explores cultural health beliefs of Maroon health care providers in the district of Brokopondo, Suriname, and their effect on health care delivery.

Background

The main organization providing health services in the interior of Suriname is the Medical Mission Primary Health Care Suriname, a non-governmental organization that depends on funding from the government, supplemented by necessary funding from donors. The Medical Mission operates 56 rural health clinics spread over an area of 130,000 km^2, serving about 54,000 people. Medical Mission health clinics have no conventional doctor/nurse team for service provision. Midlevel healthcare providers form the backbone of service delivery to the population of the many widely dispersed villages. The greater part of the health care providers and clinic assistants are persons from interior communities, who speak the local language and are familiar with, and share traditional customs and culture.

In the research area, the district of Brokopondo, the Medical Mission operates 11 clinics all in Maroon villages. Maroons are tribal people, who are the descendants of African slaves who fled from the plantations where they were forced to work under Dutch colonial rule. These run-aways established villages in the interior rainforests where they nowadays continue to adhere to many traditional cultural practices and speak their own Maroon language (Duijves and Heemskerk, 2017). Because of their history, the cultural identity of Maroons differs from that of the rest of Suriname's inhabitants. Maroon form their own group, and are seen by others as a separate group of people with deep knowledge of, among others, traditional medicine. Africa and African ancestors play an import role in Maroon culture, but practices are adapted to their current environment and to what people have learned from Indigenous peoples and the New World.

Study area

Suriname is situated on the northern shores of the South American continent and became independent from the Netherlands in 1975. The Surinamese population counts 558.369 individuals. The majority of the population lives in the coastal districts, which also includes the capital city Paramaribo. Thirty-four percent of the population lives in rural areas, also referred to as 'the interior' (World Bank, 2018).

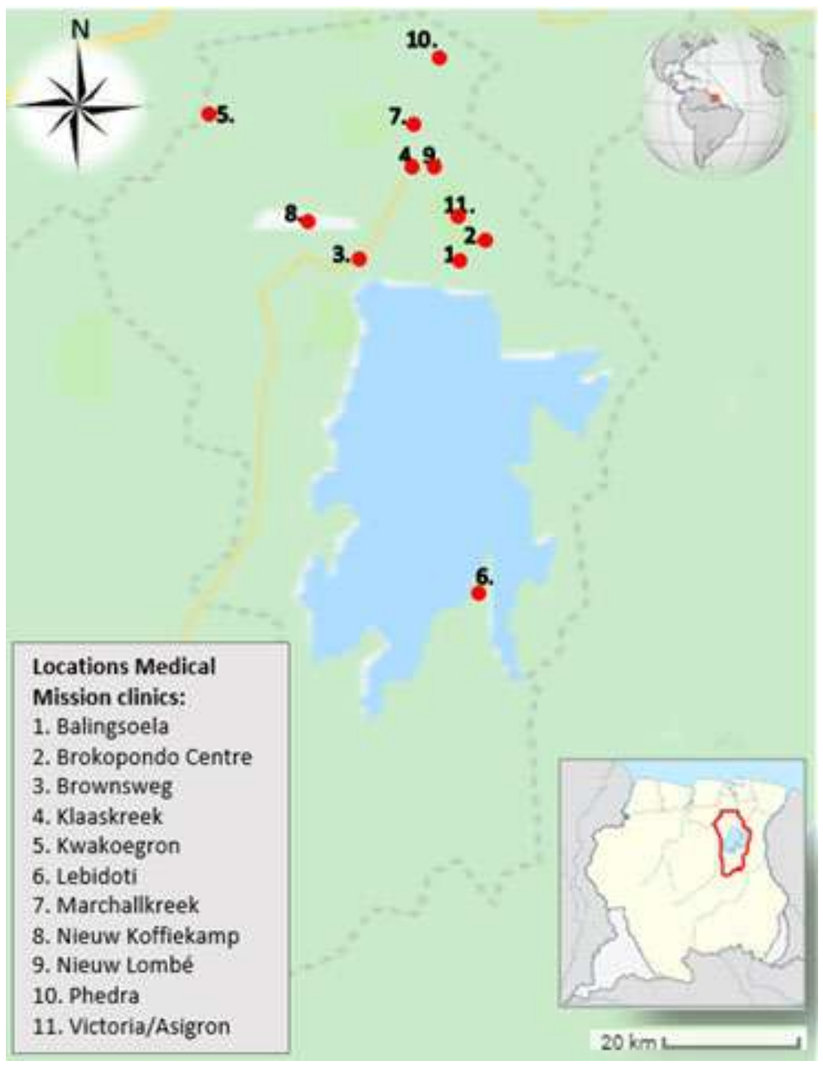

Figure 1. Overview of Medical Mission clinics in the Brokopondo district. Adapted by author from Google Maps, 2019.

Objectives

The general objective of the study was to explore culturally informed health beliefs of health care providers,
and their potential effect on health care delivery. The specific objectives were formulated as follows:

- To explore existing health beliefs and practices of health care providers in Medical Mission clinics in Brokopondo and patients living in the district.
- To identify the social and cultural factors that influence health beliefs and practices of health care providers.
- To identify when and how culturally informed health beliefs are applied/practiced in health care delivery.
- To identify if culture related to health beliefs and practices gets attention during health care providers' education.
- To develop recommendations to be more systematically responsive to cultural health beliefs into Medical Mission curriculum and health care policy.

Figure 2. Medical Mission health clinic in Klaaskreek, Brokopondo district.

Methods

The research had a qualitative design. Multiple methods were used, including face-to-face interviews (semi-structured), focus group discussions (FGDs), and observations. The methods provided rich information about cultural beliefs and health practices and helped facilitate deeper understanding of subjects. Information from key informants completed the analysis. Data collection instruments were designed in Dutch. All data collection was executed by the main researcher. Data collection during interviews with key informants and health care providers was executed in Dutch. Focus group discussions with patients were mainly executed in Dutch but supplemented with Sranantongo/Saamaka/Ndyuka. The languages used by patients and health care providers during observation were Dutch/Sranantongo/Saamaka and Ndyuka.

Results

In practice, virtually all health care providers are people with a Maroon and, to a lesser extent, Indigenous, background, and most of them (at least partly) grew up in the interior. The health care provider sometimes finds him/herself between two worlds, the cultural and the biomedical world. The original identity of the health care provider is shaped by many factors, such as culture and socio-economic background. Traditional medicine is popular among inhabitants of the Brokopondo district and is used for health promotion, disease prevention, or to cure an illness.

Notable was the understanding of the word 'culture' by the respondents whom were being spoken to during data collection. Cultural health beliefs related to *winti* (Afro-Suriname religion) are referred to as spiritual cultural health beliefs; cultural health beliefs that are not linked to ancestral spirits are in this study described as non-spiritual health beliefs. Affiliation with a church, in particular, one of the new churches such as Jehovah's Witnesses or Evangelical Church was a strong determining factor for having – or not having - spiritual cultural health beliefs and practicing them.

All health care providers were familiar with cultural health beliefs and practiced non-spiritual health practices at home. In their approach to patients, however, they were loyal to the Medical Mission protocol. Additionally, respect for the patient and his/her culture was named by the majority of the respondents as an important aspect of health care delivery. It emerged that during health care provision, culture was barely discussed only when health care providers expected the cultural health belief and/or practice could do harm.

> *People already practice cultural practices, they do not come to the clinic for this. They come for medical advice. I never give cultural advice at the clinic. I also explain the risks. For example, the danger of the use of hot water after a C-section and that they have to be careful with dresi (traditional medicine) for children.*
> *(Health care provider, male, 45 years old).*

Women from the community explained, in focus group discussions, that they were aware of the policy of the Medical Mission with regard to drinking herbal drinks at the clinic and stated that they do everything at home; however, they knew of women who brought herbal drinks in a thermos to secretly drink their drink.

> *Women here are accustomed to rubbing their body and drinking certain oso dresi (home made medication) when giving birth. We know that this is not allowed at the clinic, so we do it as much as possible at home. I do know that there are women who sometimes take it in a thermos and pretend it is water.*
> *(Respondent FGD Brownsweg, females).*

Conclusion

The study explored how health care providers in the interior of Suriname approach their own cultural health beliefs in a primary health care system imbued with Western biomedical perspectives. Cultural health beliefs cannot be neglected in a district inhabited by Ndyuka and Saamaka Maroons who have a strong cultural identity, distinct from the remainder of Suriname society.

In general, health care providers in Brokopondo follow biomedical protocols and guidelines. On the other hand, cultural health beliefs are part of their identity and cannot be viewed in isolation from health care delivery. That health care providers share the patients' culture has the obvious benefit that the health care provider understands and may anticipate on specific cultural health beliefs and practices, and can discuss these beliefs without alienating the patient. On the other hand, however, sharing the same culture can make the health care provider blind or non-reactive to common cultural practices. Traditional culture and cultural health beliefs are not an integral part of the curriculum. Health care providers were convinced that more training in cultural beliefs of patients and awareness of their own perceptions and practices would improve the quality of health care delivery.

Because most research within health care has focused on culture among patients, this research contributed to a more in-depth understanding of the influence of culture on the side of the health care providers' health care delivery. That being said, we argue that for a comprehensive understanding of the ways in which culture influences health care delivery. Ideally, research needs to focus on both sides and their interaction.

Acknowledgements

KIT Health (Royal Tropical Institute)
Medical Mission Primary Health Care Suriname

PRIVATE HEALTH SECTOR ENGAGEMENT FOR UNIVERSAL HEALTH COVERAGE (UHC): THE CASE OF EGYPT

Assessment Report [1]

Authors

Wafa Abu El Kheir-Mataria[2] and Hany Gaballah[1]

Introduction

The private health sector in Egypt is a prominent service provider. Nevertheless, it continues to pose serious challenges concerning quality, regulation and access to service. Although the government recognized the need to effectively mobilize the private sector to achieve the goal of Universal Health Coverage and meet the health-related SDGs, there is a need to assess the private health sector to ensure its effective engagement in service provision. This research is an assessment of the private health sector in Egypt in terms of: its policies, regulations, services provision, distribution, accessibility and quality.

Methodology

Quantitative descriptive methodology as well as qualitative approaches were used to conduct this research. Quantitative data from the Central Agency for Public Mobilization and Statistics (CAPMAS) was analyzed to describe the quantity, types and distribution of services provided by the private sector. Semi- structured interviews were conducted with different stakeholders to stand upon their perceptions of the current status of the private health sector, the governmental position on engaging the private sector and to identify what is needed to promote an effective engagement of the private sector in health services provision. The data obtained was then used to perform a SWOT analysis for the engagement of private sector in Egypt.

Health sector challenges in Egypt

- Increasing population and demographic transition (aging population)
- Fragmented health system in telncreased burden of non-communicable diseases
- rms of finance and delivery
- Weak coordination between the several actors present on the ground as service providers
- Quality and safety of services
- Weak regulations enforcement on private providers

Characteristics of the Private Health sector

1. High contribution in health service provision

The private sector plays an important role in health services provision in Egypt.

- In 2016, around 68% of health facilities were private including: hospitals, clinics and diagnostic facilities.
- Private health sector accounts for 25.8% of total beds.
- The private health sector attracts the highest caliber of health workforce in Egypt. The higher income in the private sector and the working environment draws health professionals to have jobs in the private sector either as their only jobs or in addition to their jobs in the public sector.

Indicator	Sector	2016
Number of medical Facilities	Governmental sector	662
	Private sector	1017
Number of Beds	Governmental sector	93897
	Private sector	32698
Number of Doctors	Governmental sector	95131
	Private sector	23271
Number of nursing staff members	Governmental sector	135172
	Private sector	18506

Figure 2. The total Number of medical facilities, beds, doctors and nurses in the governmental and private sectors in Egypt.

2. Wide distribution of Private health sector facilities

Private health sectors facilities are distributed all around egypt. However, they are more concentrated in the big governorates (e.g. Cairo, Damietta, Giza)

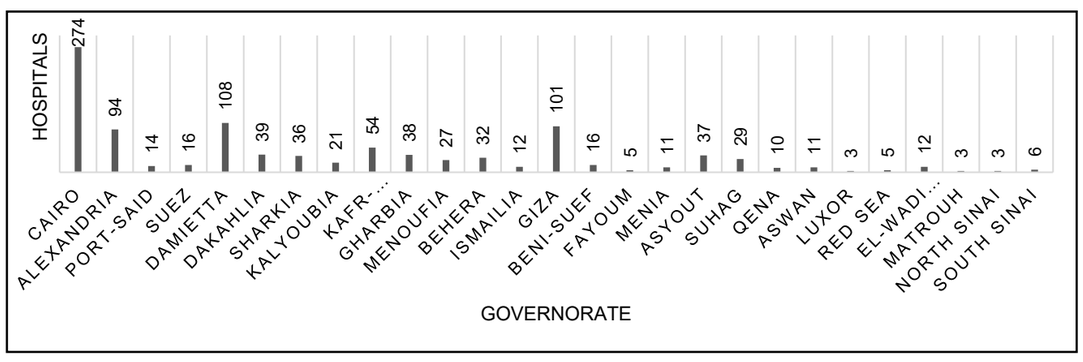

Figure 2. No. of private hospitals per governorate in Egypt.

3. Increasing investments in private health sector

Private investment in health has been increasing.
In 2014 the government started a reform program to incentivize the economy. A new investment law was enacted to provide incentives for the private and encourage foreign investment.
Health sector investors are very optimistic, notably after the signing of the new Universal Health Law. They prognosticate an increase demand on the private health services.

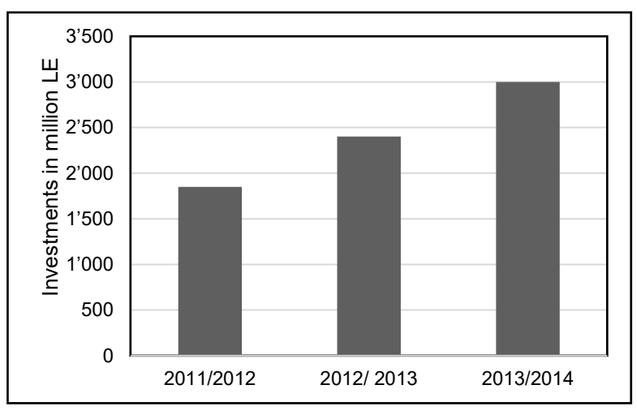

Figure 3. Investments in health services in the private sector.

4. High private health expenditure

Private health expenditure through out-of- pocket (OOP), as a percentage of total health expenditure, reached 55.7% in 2014.

OOP resulted in 4.4% of population suffering from catastrophic health expenditure and 1.1% of the Population impoverished.

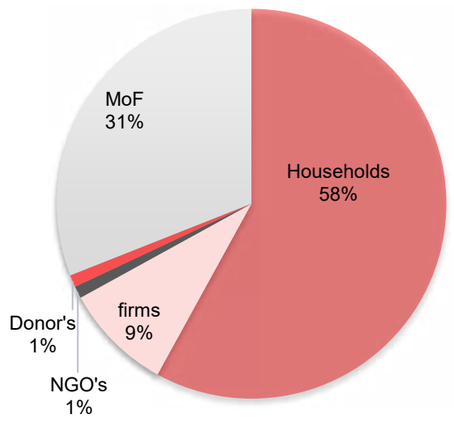

Figure 14. Financing agents of Egypt's health care system.

5. Quality of services in the private health sector

Quality of services in the private health sector in Egypt varies widely. Services in the private sectors range from low quality services to high quality services.
The low quality in certain private health services providers emerges from the absence of a governmental quality control follow-up and weak adherence of providers to regulations.

6. Legal, regulatory framework and governance in the Private health sector

Regulations and laws governing the private health sector in Egypt are numerous, several entities are responsible for these regulations. Any healthcare facility and even healthcare professionals are to abide to several and sometimes conflicting regulations. Nonetheless, private health sector regulations in Egypt are weakly enforced.

The new health insurance and the private sector

A new insurance law has been enacted in January 2018. The new health insurance system in Egypt will affect the private health sector in three main levels: regulation, competition and investment.

- Private health services providers will seek to abide to laws and follow the regulations in order to be accredited by the supervision and accreditation organization in order to be able to receive patients and get compensated by the government.
- With the new law, quality of services in the public and private sector will ameliorate leading to better competition environment between providers.
- The new health insurance law promotes private health investments through allowing private health providers to participate and be part of the new insurance system.

Private health sector engagement

Although collaboration between the government and the private sector exists this collaboration is not systematic and do not reach the level of complete engagement or partnership.
Public Private Partnership (PPP) law in Egypt was issued in 2010. Nevertheless, no PPPs were executed in the health sector. The Ministry of health and population need to develop capacities to manage PPPs in the health sector.

SWOT analysis of private health sector engagement

Strengths

- The private health sector is an important service provider
- There is a wide distribution of private (for profit & not for profit) facilities
- The PPP law is functional
- Governmental PPP institutional structure in is already established

Weaknesses

- High price and unguaranteed quality of services in the private sector
- No documented experience in PPP in healthcare in Egypt
- Weak incentives for investment in health
- Unclear governmental perception on how to engage the private sector

Opportunities

- People prefer private services
- The government commitment to implement UHC
- The new health insurance Scheme
- The increasing demand on health services
- Foreign interest in investing in healthcare in Egypt

Threats

- Inadequate enforcement of the laws and quality control criteria in the private sector
- Lack or loss of proper public funding
- PPP contracts default (complexity, risk of un-commitment)
- Decrease of foreign investments in health

Recommendations

1. Develop a geographical plan of health services needed around Egypt
2. Elaborate the PPPs policy in the health sector
3. Accelerate the enforcement of the new insurance law
4. Encourage the not-for-profit health service providers
5. Raise awareness and sensitize the MoHP employees about the importance of the private health sector

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Le RAI-HC Suisse: de l'analyse des données au niveau micro à l'analyse macro. Expérience de l'institution genevoise de maintien à domicile

Authors

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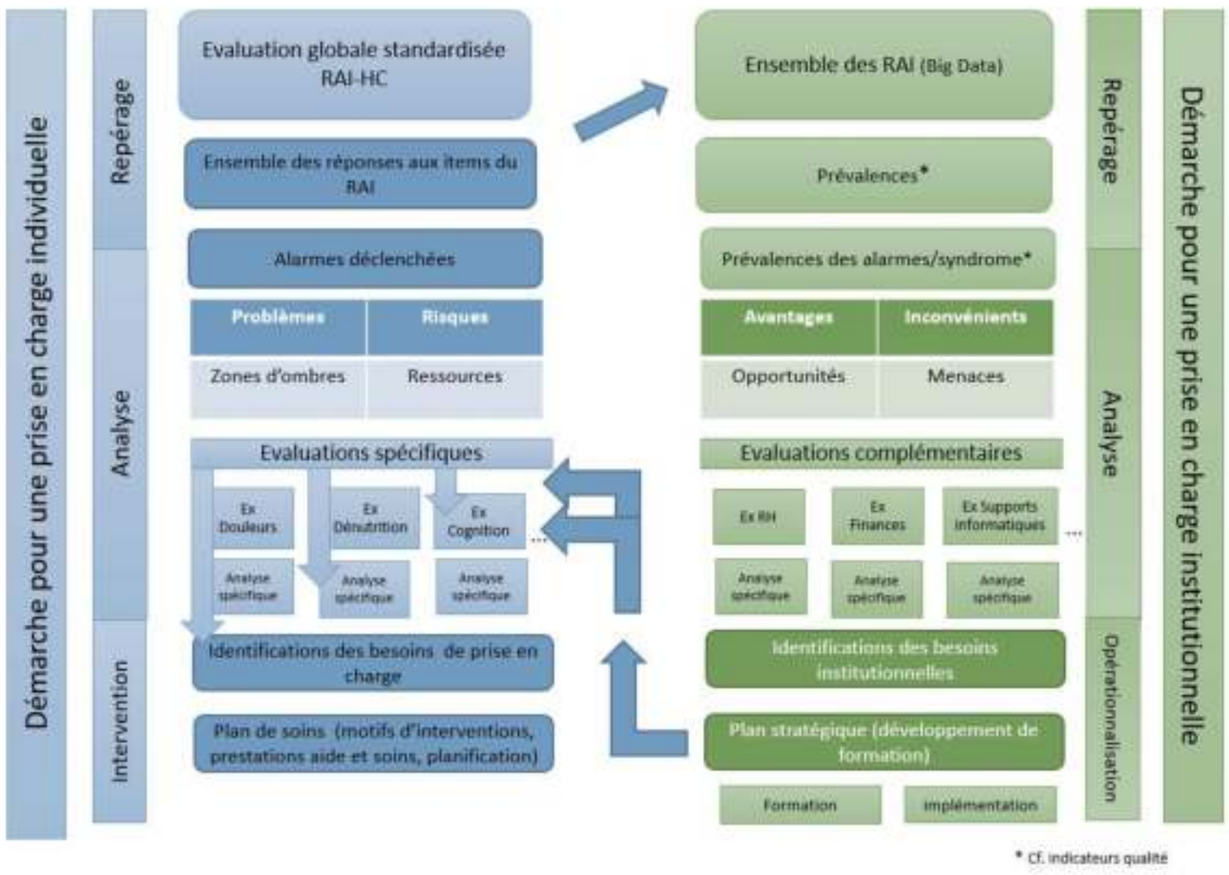
Introduction

La prévalence croissante des comorbidités (1) et les risques accrus de dépendance liés au vieillissement de la population modifient radicalement l'ampleur des besoins de santé des bénéficiaires de soins à domicile (2). En Suisse, les prestataires de soins à domicile recommandent l'utilisation du Resident Assessment Instrument-Home Care (RAI-HC) pour évaluer les besoins de santé et réaliser les plans de soins individualisés. À Genève, le RAI-HC est utilisé de manière systématique depuis 2005 par l'institution genevoise de maintien à domicile (imad) (institution publique). Chaque année, les 650 infirmières formées par imad effectuent près de 15'000 RAI-HC en routine clinique, fournissant des données pertinentes pour une description précise des besoins de santé des bénéficiaires actuels de soins à domicile.

Objectifs

Les objectifs de l'étude sont les suivants:

- ✓ fournir une description des besoins de santé des personnes recevant des soins à domicile fournis par imad
- ✓ illustrer comment ces données servent à développer des interventions cliniques ciblées, de nouveaux outils cliniques (par exemple COMID (5)), des programmes de formation interprofessionnelle actualisés et des projets de recherche

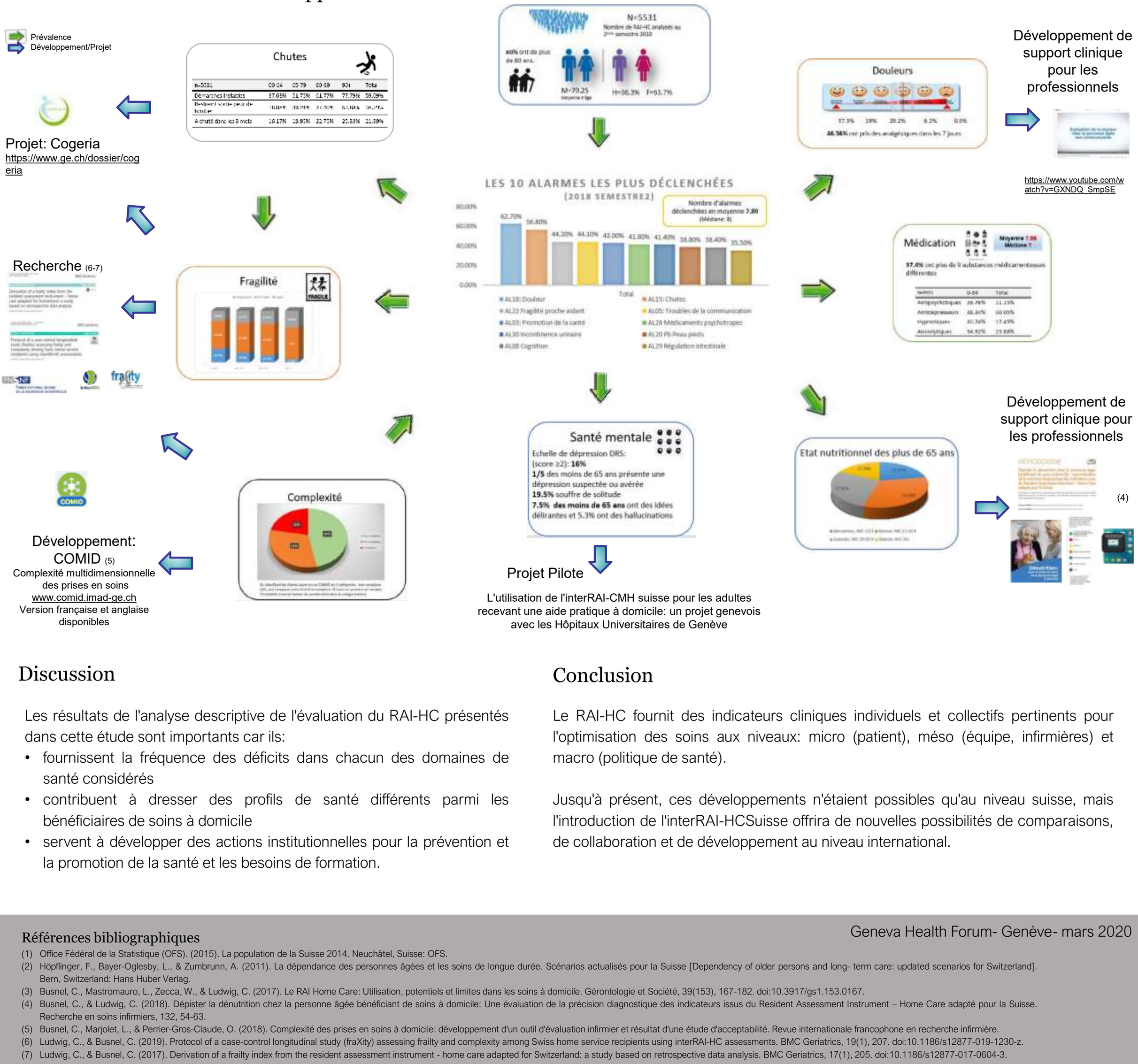


Adapted from (Busnel, Mastromauro, Zecca, & Ludwig, 2017) (3).

Méthode

- ✓ Collecte des données au moyen de la solution Medlink®.
- ✓ Des statistiques descriptives ont été réalisées sur un ensemble de données de 5'531 RAI-HC individuels collectées en routine clinique de juillet 2018 à décembre 2018.
- ✓ En cas d'évaluations multiples sur la période cible, seule la dernière a été prise en compte.

Résultats: Prévalences et développements



Discussion

Les résultats de l'analyse descriptive de l'évaluation du RAI-HC présentés dans cette étude sont importants car ils:

- fournissent la fréquence des déficits dans chacun des domaines de santé considérés
- contribuent à dresser des profils de santé différents parmi les bénéficiaires de soins à domicile
- servent à développer des actions institutionnelles pour la prévention et la promotion de la santé et les besoins de formation.

Conclusion

Le RAI-HC fournit des indicateurs cliniques individuels et collectifs pertinents pour l'optimisation des soins aux niveaux: micro (patient), méso (équipe, infirmières) et macro (politique de santé).

Jusqu'à présent, ces développements n'étaient possibles qu'au niveau suisse, mais l'introduction de l'interRAI-HCSuisse offrira de nouvelles possibilités de comparaisons, de collaboration et de développement au niveau international.

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GLOBAL HEALTH DIPLOMACY IN MEXICO

Findings from an explanatory multi-case study of the integration of health into foreign policy in the Americas

Authors

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Background

Global health diplomacy (GHD) focuses on the analysis of the responses of diverse stakeholders –governments, multilateral agents, and civil society – to phenomena that transcend national borders and can affect population health and its determinants. Global health risks, national health security, emergency health preparedness, and cross-border humanitarian health assistance are some of the topics of interest for GHD. Although conceptual advancements in GHD are based on the disciplinary intersection of International Relations theory and Public Health practice, their aims lie beyond the traditional focus of both disciplines, broadening the scope of study in terms of the relationship between actors (nation states) and subject of studies (population health). Most of the current GHD conceptual developments have been proposed by scholars from developed countries; however, empirically based studies about how health becomes an issue of relevance for foreign policy remain scarce. Even rarer are those studies conducted in the Latin American region.[1-3]

In this contribution we share some findings from a multi-case research project aiming to understand how health becomes an issue of concern in the foreign policy of four countries in the Americas region (Brazil, Canada, Chile, and Mexico). Particularly, we focus on the Mexican case as a mean to illustrate how GHD processes occur, based on the experiences of key actors from three different sectors and emphasizing that such processes entail an exercise of both political will and power, along with cyclical administration priorities that determine the success of some health concerns in entering foreign policy.

Objectives

To analyze some GHD processes in Mexico based on the experiences of key informants from the Foreign Affairs (FAS), Health (HS) and Non-Government Organization (NGO) sectors, by describing:

- Health concerns relevant for foreign policy.
- Conditions and processes that influence health to become a relevant issue for Mexican foreign policy.
- The impacts of these processes at national level.

Methods

Sampling: Purposive sampling of high-rank representatives of the three sectors involved in GHD including a former Mexican ambassador, the permanent representative of Mexico at the United Nations in Geneva, the General Director of Foreign Affairs at the Secretariat of Health, and the Head of Legislative Branch Liaison from NGO "Consortium for Parliamentary Dialog", among others.

Fieldwork and Analysis: Semi-structured interviews exploring the topics described in the objectives section were conducted between 2017 and 2018. Interviews were transcribed and coded into framework matrices based on a previously defined code tree, using QSR NVivo 10 software. All ethical considerations for research on human subjects from the Research Ethics Committee of the National Institute of Public Health, Mexico, were met.

Results

The following table summarizes the main health concerns, processes, and impacts involved in foreign policy and the power of influence in GHD processes in Mexico by sector.

SECTOR	CONCERNS	PROCESSES (STRATEGIES AND MECHANISMS)	IMPACTS AT NATIONAL LEVEL	POWER OF INFLUENCE IN SETTING CONCERNS AS PRIORITY IN THE GLOBAL HEALTH AGENDA
Health	• Border Health and Bi-National Health (with US) • Migrant health: Regional integration for migrants in transit and Mexican immigrants in US • Global Health Security • Tobacco control	• Creation of specialized bureaucracies and Programs (i.e. US–Mexico Border Health Commission; Office for Tobacco Control in Mexico; *Ventanillas de Salud* Program at Mexican Consulates in the US)	• Pressure from both private and public stakeholder (pharmaceutical, food industry and other government bodies) if interests are affected	Bi-National agenda (with US)+++ Multilateral agenda+ *"In the multilateral sphere, the one driving the questions of the integration of the foreign policy and the health components is the foreign affairs sector, so let's say that we are reactive"* Informant, Health Sector
Foreign Affairs	• National security against pandemics • Vector-borne diseases • Cooperation for development of regional integration and health systems	• Mobilization of technical and political instruments developed by the UN agencies system • Intersectoral consultation and negotiations (academia, health sector, industry) • Creation of *Ad Hoc* intersectoral groups to define positions in foreign policy • Creation of specialized bureaucracies (agencies for global development)	• Implementation of non-legally binding agreements can be difficult when affecting particular interests from other sectors	National policies against pandemics+++ Border health++ Negotiation capacity in international treaties+ National health policy decision-making+ *"We do not, influence the decision in health matters at national level. What we do is to advise them on how the international environment is and we articulate a position* (…) *there are decisions taken by consensus and those decisions* [must] *reflect the interests of Mexico."* Informant, Foreign Affairs Sector
NGO	• Women rights • Obesity prevention • Road safety • Frontal labeling of food packing • Tax on sugar-sweetened beverages	• Establishing partnerships with key actors, and strengthening local institutional capacity • Coalition and networking forming with other national and international NGOs • Technical cooperation with international organizations and donors • Political visibility and public agenda positioning (lobbying)	• According to key informants, Mexico signs and adhere to numerous agreements and global initiatives, however, unlike trade treaties, the non-legally binding agreements are difficult to adapt and translate into local policies due to lack of enforcing mechanisms to comply, and pressure from private actors	Advocacy for health-related issues in foreign policy+++ Decision-making processes+ *"There is a huge distance between the signature of an international agreement and its implementation at the local level. There is also a need to strengthen accountability mechanisms, including sanctions, so what is agreed at the international level is implemented (...) The participation [In priority setting and health agenda] is completely closed to the participation of civil society."* Informant, NGOs

+ = Limited: Sector is mostly out of negotiations and requires formal invitations from other sectors to exercise decision-making power or participate in priority setting processes
++ = Moderate: Sector requires intersectoral coordination/consensus to exercise decision-making power
+++ = Strong: Sector has the most decision-making power over agenda; intersectoral coordination is secondary to decision-making

Conclusion

The entering of health concerns into foreign policy in Mexico is a crucial aspect of GHD processes. As we have shown, there are different health issues supported by the sectors here analyzed, and each of those sectors have an unpaired power of decision for priority setting. In a context of asymmetric power relationships, government actors have the highest influence, particularly the FAS (with the securitization of health issues and pandemics, and its relationship with economic interests), whereas NGO, in spite of strong advocacy to positioning chronic diseases-related problems in the agenda, is frequently left out from decision-making GHD processes, even in cases where government bodies call them for consultancy purposes.

These findings suggest the need to promote less hierarchical intersectoral collaboration within government sectors – mainly HS and FAS – and between NGO and government bodies, to improve participative GHD processes in Mexico, leading to more consensual and coherent responses to global health challenges.

One limitation experienced during the development of this research was that some key informants were not possible to interview (congressmen) due to persistent conflicts with their agenda. As result, triangulation of findings between this and the rest of the key informants from other sectors was not conducted.

Acknowledgements

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NERVE CONDUCTION STUDIES IN NEWLY DIAGNOSED CASES OF HYPOTHYROID PATIENT REFERRED FROM THE TELECONSULTATION SITES OF EASTERN NEPAL LINKED WITH BPKIHS-HUG-RAFT PROJECT AT BPKIHS

Authors

Shital Gupta, Nirmala Limbu, Pramendra Prasad Gupta, Narendra Bhatta and Antoine Geissbuhler

Introduction

Thyroid gland is one of the major endocrine gland which secretes thyroxine (T_3) and triidothyronine (T_4).Thyroid hormones acts on many organs including central and peripheral nervous system.

Electrophysiological parameters may be abnormal even in newly diagnosed cased of hypothyroid patients. Thus, we conducted this study to explore the effect of thyroid hormones on somatic nervous system assessed by Nerve conduction study (NCS).

Materials and Methods

This was the cross-sectional study done in the patients who had telemedicine consultation in the rural setup form BPKIHS and was referred from there for investigations. The inclusion criteria were patient with diagnosed cases of hypothyroidism and newly diagnosed cases who had sign and symptoms of hypothyroidism and who also complaint of tingling sensation during the consultation. Those all patients were advised to do Thyroid Investigations and also Nerve Conduction Velocity (NCV) Test. Informed consent was taken from the patients. Ethical Clearance was taken from the Institutional Review Committee of BPKIHS.

The teleconsultation remote sites from where the patients were referred after consultation were Community Healthcare Centre, Patle and Parewadin Primary Health Care Centre, Sidua in Dhankutta District, Sub-Health Post, Fikkal in Ilam District.

All subjects which were included in the study were performed NCS in median, ulnar, tibial and sural nerves using Nihonkohden Machine (NM-420S, Japan).

Results

Both the groups were comparable in term of their age, BMI, PR, SBP and DBP. onset latency of median sensory nerves on both sides were significantly high in hypothyroid patients as compared to healthy controls. Sensory parameters of NCS showed significant decrease in left median nerve SNAP amplitude and nerve conduction velocity of bilateral median nerves in hypothyroid patients as compared to healthy controls. In motor parameters of NCS, onset latencies of bilateral median nerves and right ulnar nerve were significantly increased in hypothyroid patients.

Table 1. Comparison of anthropometric variables between healthy controls and hypothyroid patients

Anthropometric Variables	Healthy Controls n=30 (Mean ± SD)	Hypothyroid patients n=30 (Mean ± SD)	Variables P Value
Age (years)	29.27±6.21	31.96±9.12	NS
Weight (kg)	60.10±10.73	62.7±15.93	NS
Height (cm)	159.07±7.060	157.5±5.53	NS
Body mass index (kg/m2)	23.85±4.62	25.14±5.60	NS
Upper Limb Length (cm)	69.07±3.05	68.96±3.34	NS
Lower Limb Length (cm)	93.30±3.75	93.36±4.87	NS

There were no significant changes in any anthropometric parameters between healthy controls and hypothyroid patients in term of their age, height, weight, body mass index (BMI), upper limb length and lower limb length

Cardiorespiratory variables such as SBP, DBP, PR and RR of both healthy controls and hypothyroid patients were measured at rest. There were no significant changes in either group.

Table 2. Comparison of Sensory, Motor Parameters of Nerve Conduction Study (NCS) between healthy controls and hypothyroid patients.

Parameters of NCS	Hypothyroid patients (n=30) (Mean ± SD)	Healthy controls (n=30) (Mean ± SD)	P value
Sensory Parameters			
LMNONLAT	2.12 ± 0.39	1.86 ± 0.39	0.003
LMNAMP	31.59 ± 14.06	38.24 ±10.23	0.048
LMNCV	53.54±8.87	60.40±6.57	0.001
RMNONLAT	2.02±0.32	1.76±0.20	0.001
RMNCV	55.88±8.0	62.75±6.06	0.001
Motor parameters of NCS			
LMNONLAT	3.163±0.578	2.79±0.548	0.008
RMNONLAT	3.05±0.5488	2.75±0.532	0.024
RUONLAT	2.19±0.471	2.0±0.301	0.043

Discussion

The increased sensory latency and decreased sensory NCV in any nerve indicate sensory conduction impairment of that nerve. The sensory nerve conduction impairment is frequent in early stage of neuropathy in thyroid deficiency. The mechanism involved in the development of neuropathy (sensory and motor) in hypothyroidism still remains unclear. Mononeuropathies secondary to compression caused by deposition of mucopolysaccharide or mucinous deposits in the soft tissues surrounding peripheral nerves and a polyneuropathy due to either a demyelinating process or primary axonal degeneration are the most commonly proposed mechanisms of peripheral nerve dysfunction in hypothyroidism. Myelin structure abnormalities and dysfunction of axonal oligodendroglia processes may also be responsible for neuropathy in patients with hypothyroidism.

Conclusions

In somatic nerves; median, ulnar, tibial and sural nerves were studied and mostly median nerve were found to be affected.

Nepal

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A WOMEN CENTERED QUALITATIVE MANAGEMENT TOOL TO IMPROVE MATERNITY CARE:

A Transdisciplinary Approach

Authors

Sandra Orcí Gutiérrez, Panagiota Panopoulou and Sara Arce

REDUCING MATERNAL MORTALITY THROUGH WOMEN'S EMPOWERMENT

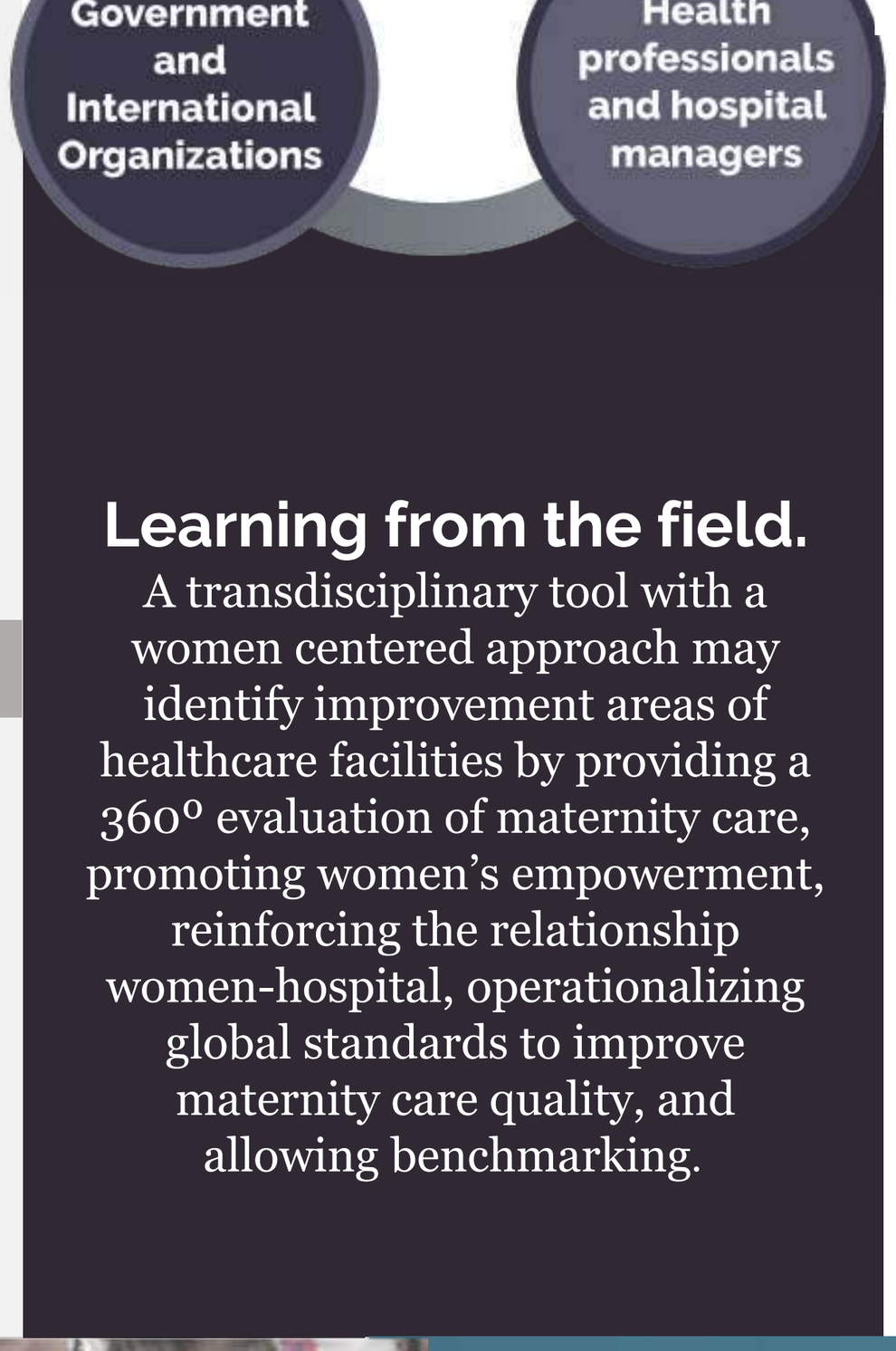
A large majority of the nearly 295,000 maternal deaths that occur per year could be prevented. Decreasing preventable maternal deaths requires participation of all healthcare stakeholders: patients, health professionals and public health leaders.

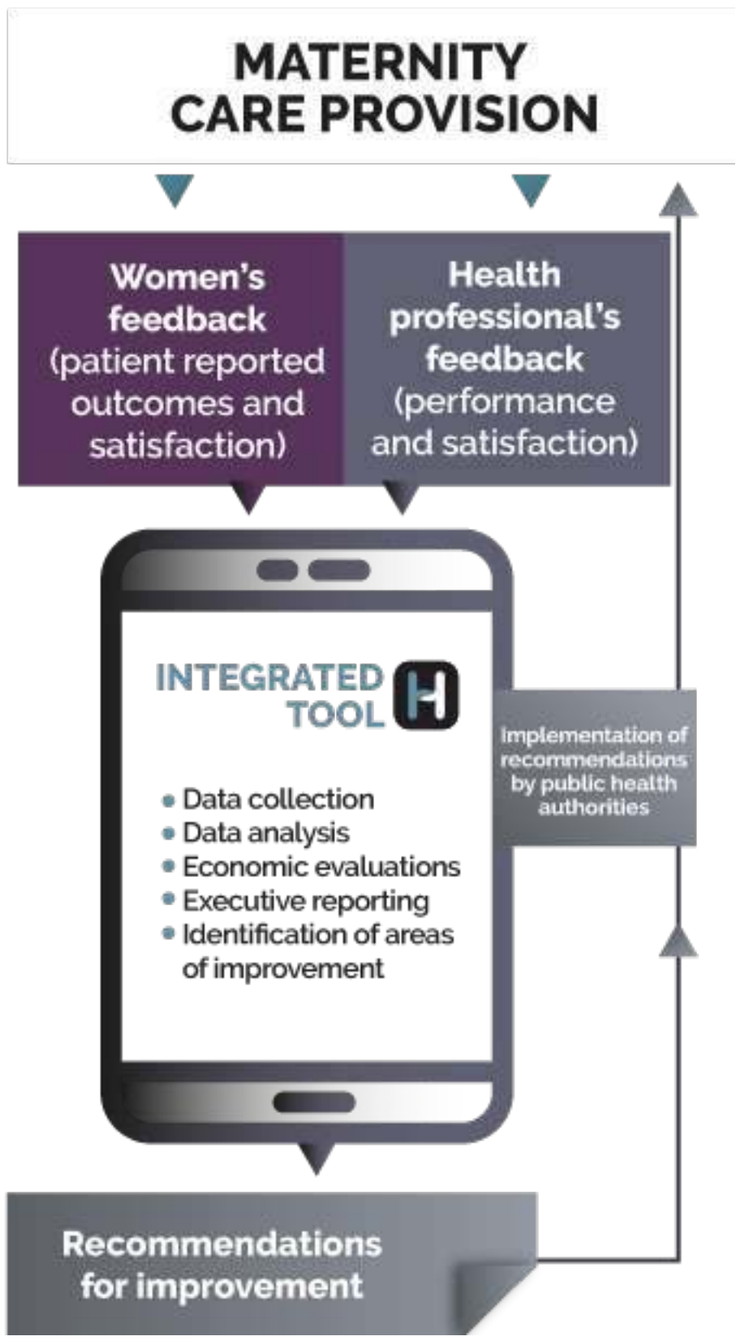
Human rights for maternity care. Women's empowerment is an internationally supported human-rights policy to improve maternity care and decrease maternal mortality.

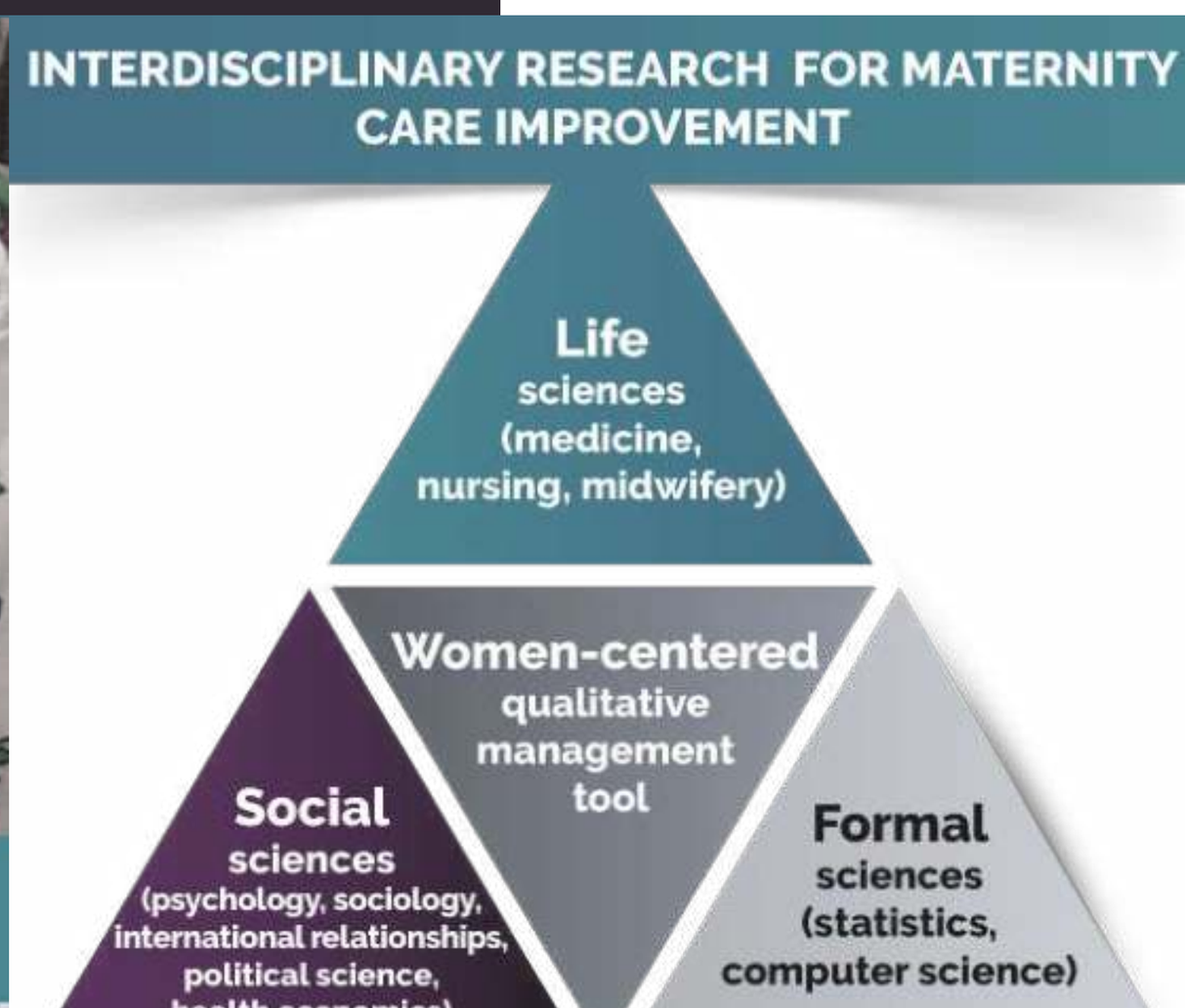
Promoting women's participation in maternity care. We aimed to find an integrated solution to encourage women's participation to provide a complete evaluation for maternity care.delenit augue duis dolore te feugait nulla.

METHODS

1. Repko method for interdisciplinary research
2. Expert consultation
3. Prototype design
4. Focus groups in Switzerland and Mexico
5. *Ongoing pilot in Guerrero, Mexico (3 hospitals and 2 clinics)*







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EXPLORING THE GAPS IN THE CONTINUUM OF IMMUNIZATION SERVICE AMONG DEMOGRAPHIC SUBPOPULATIONS IN SIX SOUTH-ASIAN COUNTRIES

An Application of Heckman Sample Selection Model

Author

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Background

South-Asia improved immunization coverage by mainstreaming the "Expanded Program on Immunization" within the primary-care system. This study explores the continuum of immunization service by assessing the dropout rates of the third-dose of diphtheria-pertussis-tetanus (DPT3) and the first-dose of Measles vaccine in six South-Asian countries.

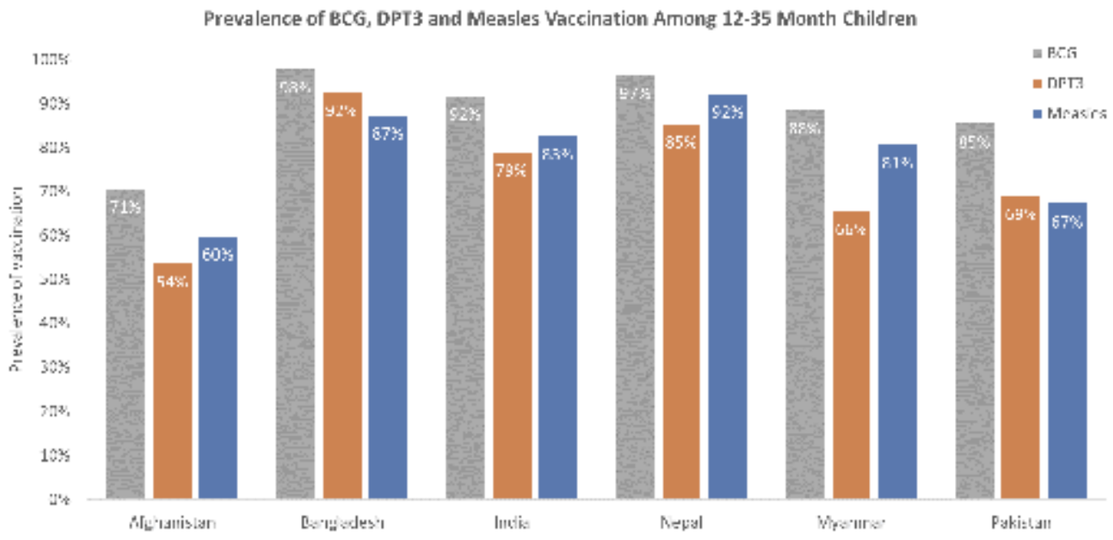
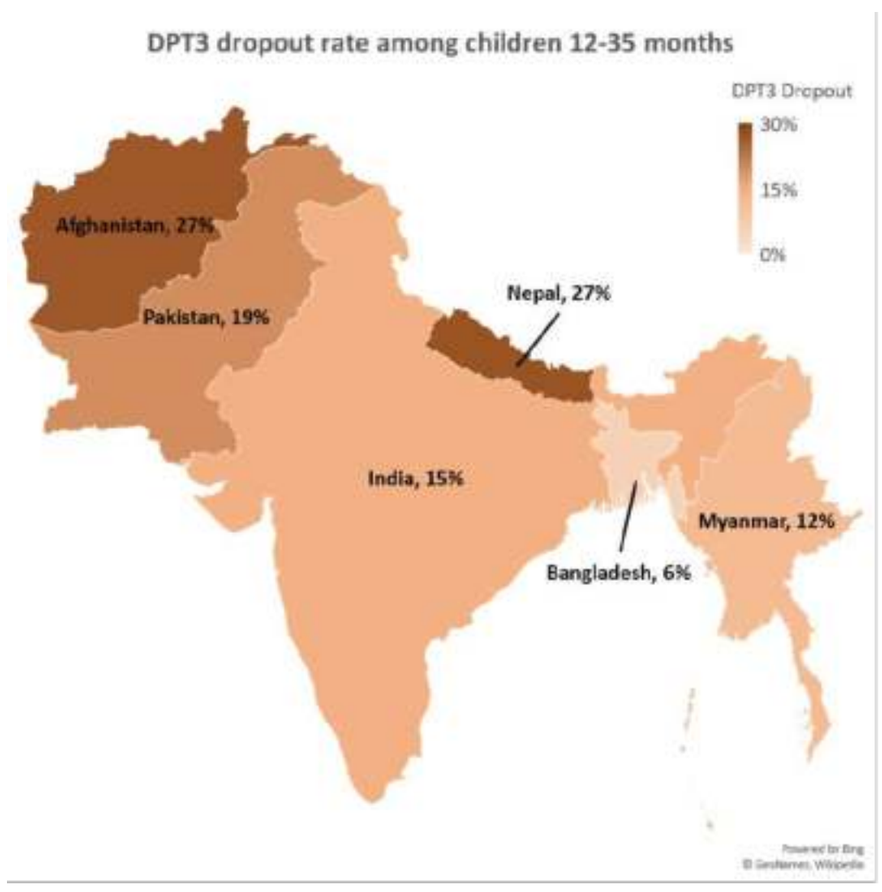


Figure1. Prevalence of BCG, DPT3, and Measles vaccination among 12-35 months children.



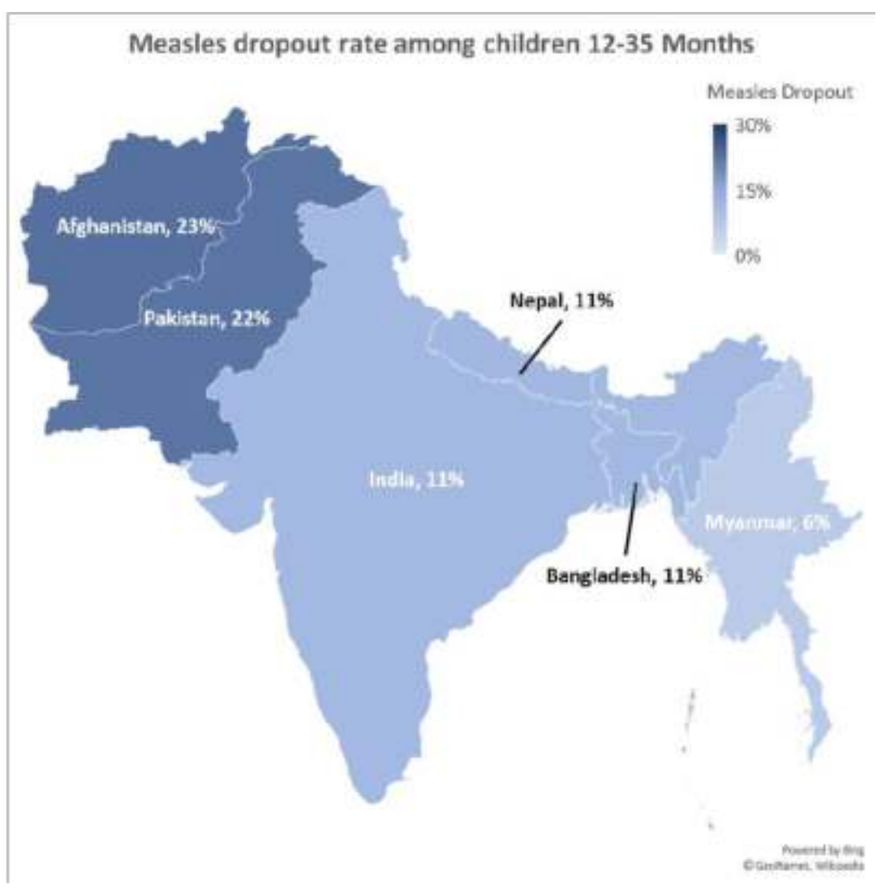


Figure 2. Dropout rate of DPT3 and Measles vaccination among 12-35 months children across countries.

Method

This analysis is based on the Demographic Health Survey (DHS) from Afghanistan, Bangladesh, India, Nepal, Myanmar, and Pakistan from 2010-2016, including 12-35-month children (n= 105,562). DPT3 and measles dropout rates were measured as the proportion of children who received Bacille Calmette-Guérin (BCG) vaccination but not the DPT3 or measles vaccines. Heckman sample selection model was used to obtain associated factors for DPT3 and measles vaccination, conditional on BCG vaccination status.

Results

The DPT3 dropout rate was – Afghanistan 27%, Bangladesh 6%, India 15%, Myanmar 12%, Nepal 27%, Pakistan 19%. Measles vaccine dropout was – Afghanistan 23%, Bangladesh 11%, India 11%, Myanmar 16%, Nepal 11%, Pakistan 22%. The probability of receiving DPT3 or measles vaccines for a child – who already received the BCG vaccine – significantly increased due to the mother's education and household wealth in all countries, except Afghanistan and Myanmar. While Afghanistan had the highest dropout rate, the likelihood of receiving DPT3 or Measles vaccine didn't significantly increase in any demographic subpopulations. Wealth was only associated with measles vaccination among children who already received the BCG vaccine in Myanmar.

Table 1. Estimated adjusted coefficient of receiving DPT3 and Measles vaccinations (conditional on receiving BCG vaccination) among the 12-35 months children derived from Heckman Sample Selection models in six South-Asian countries (n= 105,562).

	DPT3 conditional on BCG						Measles conditional on BCG					
	A	*B*	*I*	*N*	*M*	*P*	*A*	*B*	*I*	*N*	*M*	*P*
Covariates	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
Sex (Ref: Boy)												
Girl	0.04	0.11	0.04*	-0.06	-0.03	-0.10	0.06	0.05	-0.02	-0.20	-0.04	-0.06
Birth order (Ref: 1st)												
2nd 3rd	0.00	0.20	0.09***	0.03	0.03	0.01	0.05	0.04	0.05*	0.18	0.16	0.11
4th or more	0.14	0.26	0.23***	0.29	0.08	0.00	0.00	0.31	0.14***	0.09	0.25	0.02
Mother's age (Ref: 20-29 year)												
Less than 20 years	-0.14	-0.09	-0.09	-0.13	0.18	0.17	-0.39*	-0.01	-0.07	0.04	0.10	0.01
30-39 year	-0.01	0.37*	0.09***	0.21	0.27**	0.09	0.00	0.26	0.04	0.73***	0.25*	0.02
More than 40 year	-0.03	0.06	0.09	0.16	0.33	0.09	-0.00	0.40	0.00	0.08	0.12	0.06
Mother's education (Ref: None)												
Primary level	0.08	0.26	0.12***	0.01	-0.13	0.21**	0.09	0.06	0.08**	0.31*	-0.06	0.33***
Secondary level	0.38**	0.40**	0.20***	0.27*	0.04	0.34***	0.37*	0.31**	0.20***	0.51**	0.20	0.35***
Higher than secondary level	0.58	0.82*	0.21***	0.40*	0.31	0.37**	0.84***	0.61**	0.26***	0.69*	0.43	0.58***
Exposer to media (Ref: Low)												
Medium	0.03	0.10	0.13***	0.03	-0.21	0.05	-0.15*	0.11	0.14***	0.14	-0.36**	0.10
High	-0.01	0.18	0.14***	0.13	-0.18	0.07	-0.26**	0.05	0.14***	0.66***	-0.15	0.02
Residency (Ref: Urban)												
Rural	0.11	0.24*	0.10***	0.17	-0.23	0.16*	0.09	0.17	0.11***	0.11	0.10	0.17*
Wealth Quintile (Ref: Poorest)												
Poorer	0.05	0.33*	0.01	0.22	0.32**	0.45***	0.00	0.30**	0.01	0.30	0.02	0.38**
Middle	0.01	0.43**	0.05	0.23	0.55***	0.37***	0.19*	0.41**	0.04	0.50**	0.44**	0.39*
Richer	0.14	0.41*	0.08*	-0.15	0.43**	0.63***	-0.03	0.46***	0.08*	-0.20	0.26	0.52**
Richest	0.33*	0.69***	0.14***	-0.31	0.62**	0.57***	0.16	0.61***	0.20***	-0.56*	0.42	0.57**

Note: A – Afghanistan, B – Bangladesh, I – India, N – Nepal, M – Myanmar, P – Pakistan; AOR – Adjusted Odds Ratio
**** = P < 0.001, ** = P < 0.01, * = P < 0.05*

Despite progress in immunization coverage, persistent inequalities exist in South-Asia. This study systematically assessed this variability of the continuum of immunization care and identified demographic subpopulations, which may benefit from strategic intervention efforts.

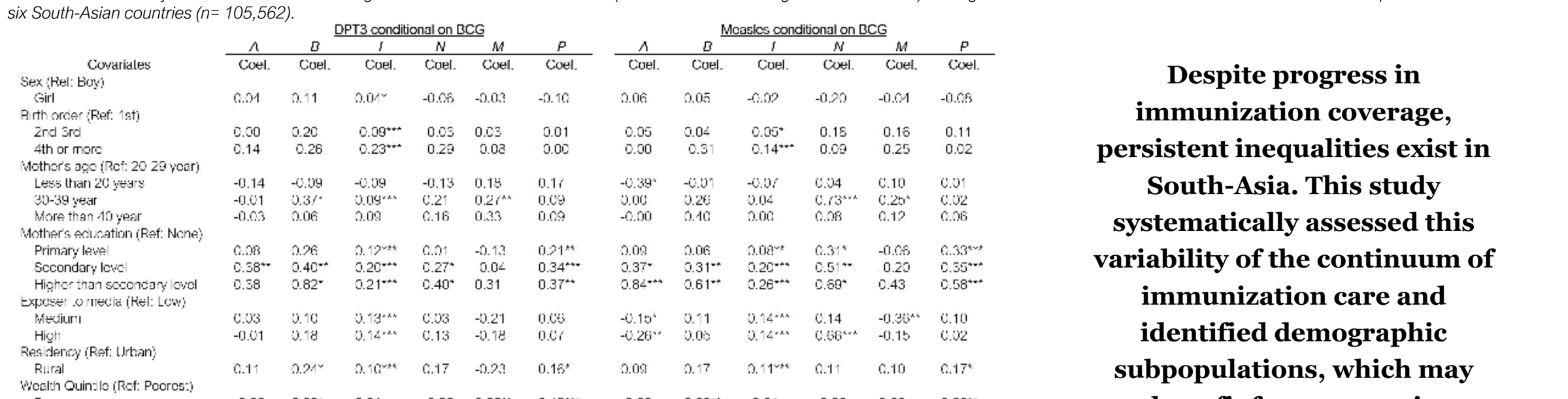


Figure 3. Predictive margins of maternal education and household wealth on the probability of receiving DPT3 and Measles vaccination among 12-35 months children.

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MODELLING HEALTHCARE ACCESS TO SUPPORT DISASTER RESPONSE

A Spatial Impact Analysis of Cyclones Idai and Kenneth in Mozambique

Authors

Fleur Hierink, Nelson Rodrigues, Maria Muñiz, Rocco Panciera and Nicolas Ray

Figure 1: Abreu, S. (Photographer). (April, 2019). Aerial photo of the damage caused by Cyclone Kenneth. Retrieved October 15, 2020, from https://public.wmo.int/en/media/news/another-unprecedented-tropical-cyclone-and-flooding-hits-Mozambique.

Figure 2: Bulawayo, P/Reuters (Photographer). (March, 2019). A man surveys a damaged bridge along Umvumvu river following Cyclone Idai in Chimanimani, Zimbabwe. Retrieved October 15 2020, from https://zimfact.org/fact-sheet-cyclone-idai-and-zimbabwe/

Figure 3: Moreira, G/WHO (Photographer). (July, 2019). RD Visit. Retrieved October 15 2020, from https://www.afro.who.int/sites/default/files/2019-07/WHO-Gloria%20Moreira.JPG.

Background

In March and May 2019 two cyclones made landfall in Mozambique (Idai and Kenneth). Damage to hospitals & roads, and extensive flooding caused severe disruption in health service delivery. The aim of this study was therefore to estimate post-disaster travel times to functional health facilities and analyze losses in accessibility coverage after these cyclones to target and prioritize disaster response.

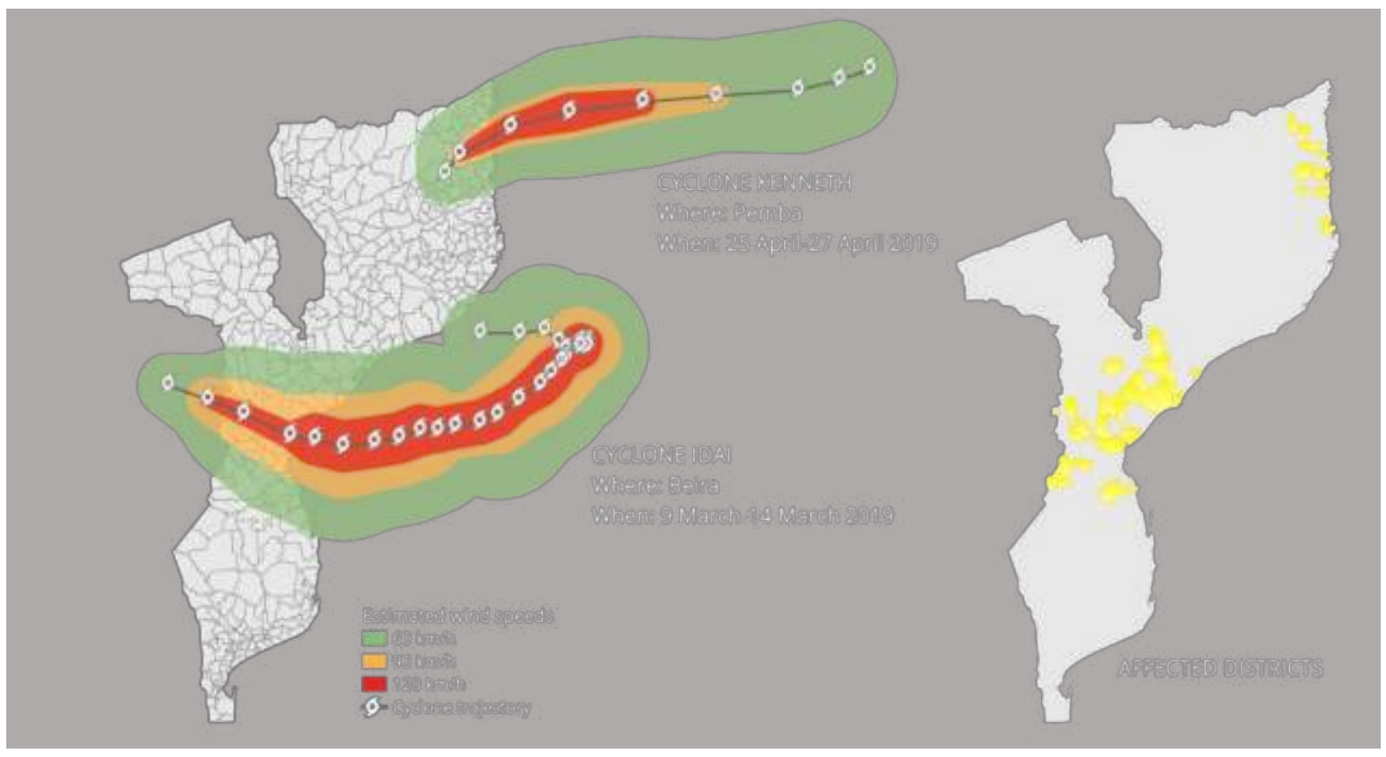
Methods

We modeled travel time of children under five to the nearest functional health facility in two cyclone-affected regions in Mozambique. Modelling was done using **AccessMod version 5.6.30**, where roads, rivers, lakes, flood extent, topography, and land cover datasets were overlaid with health facility coordinates and high-resolution population data of children under 5 to obtain accessibility coverage estimates under different travel scenarios.

Results

Accessibility coverage decreased in the cyclone affected districts, as a result of reduced travel speeds, road constraints and non-functional health facilities. In Idai-affected districts, accessibility coverage in 2 hours travel time decreased from 78.8% to 52.5%, implying that 136,941 children lost access. In Kenneth-affected districts, accessibility coverage decreased from 82.2% to 71.5%, corresponding to 14,330 children losing access to care in 2 hours travel time.

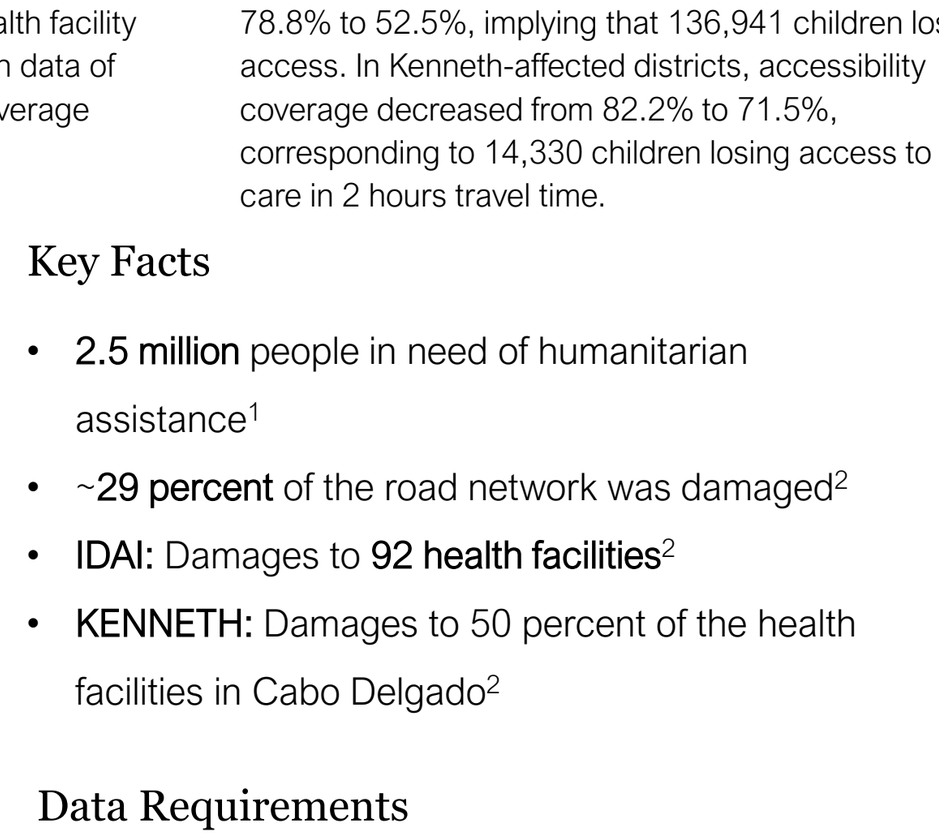
Cyclone Trajectories & Affected Districts



Key Facts

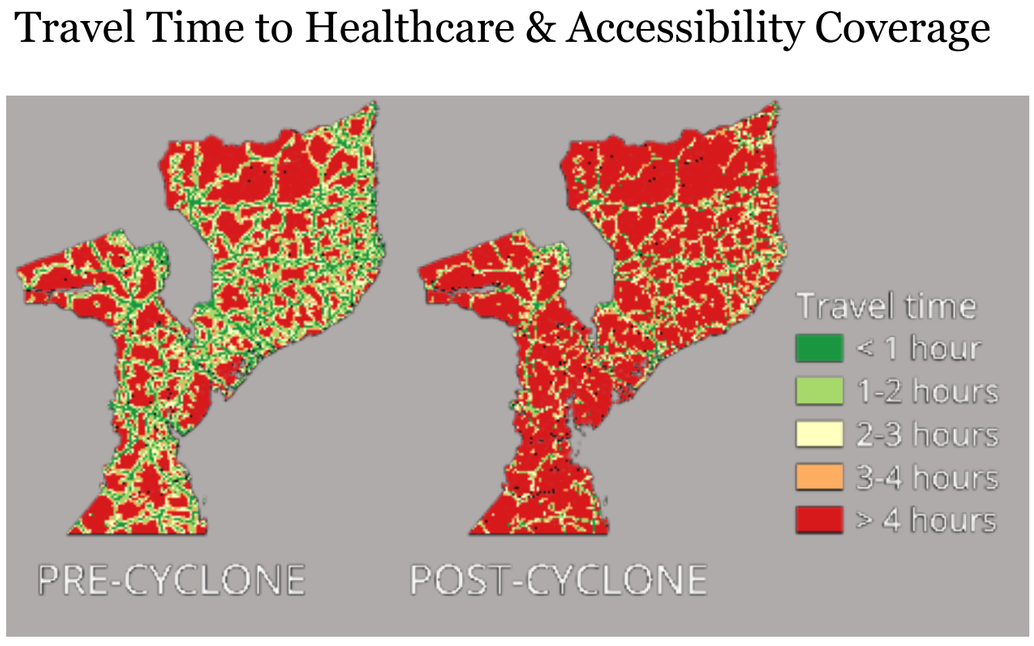
- **2.5 million** people in need of humanitarian assistance[1]
- **~29 percent** of the road network was damaged[2]
- **IDAI:** Damages to **92 health facilities**[2]
- **KENNETH:** Damages to 50 percent of the health facilities in Cabo Delgado[2]

Data Requirements



"In a post-disaster setting, access to health care is essential for effective response and recovery."

Travel Time to Healthcare & Accessibility Coverage



Cyclone	Travel time	Pre-cyclone: Children <5 covered (nr.)	Pre-cyclone: Children <5 covered (%)	Post-cyclone: Children <5 covered (nr.)	Post-cyclone: Children <5 covered (%)	Post-cyclone: Children <5 coverage loss (nr.)	Post-cyclone: Children <5 coverage loss (%)
Idai	30 minutes	298,432	57.3	153,842	29.5	144,591	27.7
	1 hour	346,409	66.5	206,610	39.6	139,799	26.8
	2 hours	410,696	78.8	273,755	52.5	136,941	26.3
Kenneth	30 minutes	131,120	72.0	63,953	48.8	304,15	23.2
	1 hour	99,056	73.8	86,997	64.8	12,060	9.0
	2 hours	110,348	82.2	96,019	71.5	14,330	10.7

References

1. Office for the Coordination of Humanitarian Affairs, 'Southern Africa: Cyclones Idai and Kenneth snapshot', OCHA, 10 July 2019.
2. Matera, M. (2019). Project Information Document-Mozambique: Cyclone Idai Kenneth Emergency Recovery and Resilience Project-P171040 (No. PIDA26977, pp. 1-0). The World Bank.

GeoHealth
INSTITUTE OF GLOBAL HEALTH & INSTITUTE FOR ENVIRONMENTAL SCIENCES

UNIVERSITÉ DE GENÈVE

WORK-RELATED FACILITATORS AND BARRIERS FOR SELF-MANAGEMENT BY TYPE 2 DIABETES PATIENTS AMONG WORKING POPULATION

A Qualitative Study

Author

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Background

- The International Diabetes Foundation projected that the number of people with diabetes at working age (20 to 64) would increase from around 352 million in 2019 to 417 million in 2030, i.e., by about 18% in just 10 years (1).
- Very limited studies investigated the self-management situation of diabetic patients with employment and whether existing healthcare services met their needs.

Objectives

- To map out the facilitators and barriers for diabetes management at the workplace.
- To propose enhacement to healthcare services to better fit the needs of diabetic patients with employment.

Methods

- Group interviews were conducted with 38 Type 2 diabetes patients engaged in a range of occupations.
- Purposive sampling at diabetes complication screening sessions at one of the largest public hospitals in Hong Kong to cover different occupation groups to ensure gender ratio and a range in disease duration.
- A semistructured discussion guide was developed on the basis of a literature review and preparatory scoping discussion with diabetes clinicians, public health experts, and union/ NGO representatives.
- All discussions were audio-recorded and transcribed verbatim for analysis.
- Thematic analysis was conducted using NVivo 12 for data management and analysis.

Results

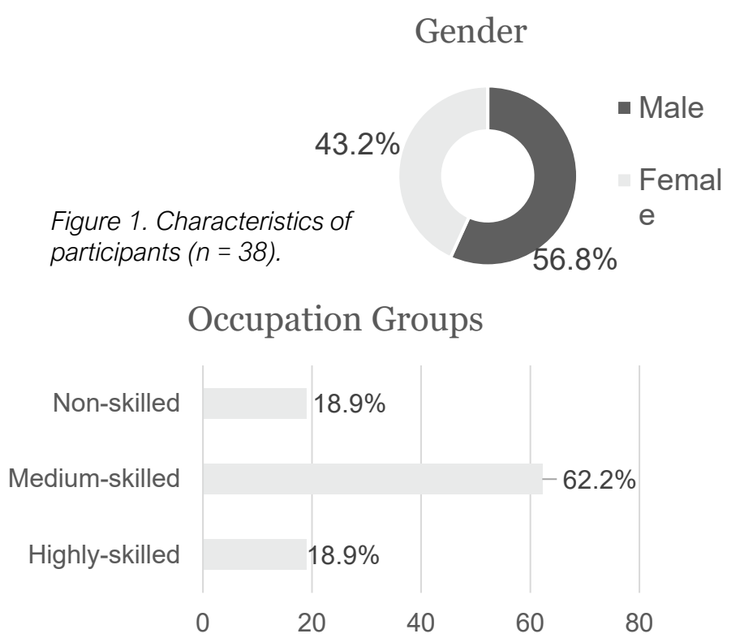


Figure 1. Characteristics of participants (n = 38).

Mean age (range):
53 (26 – 64)

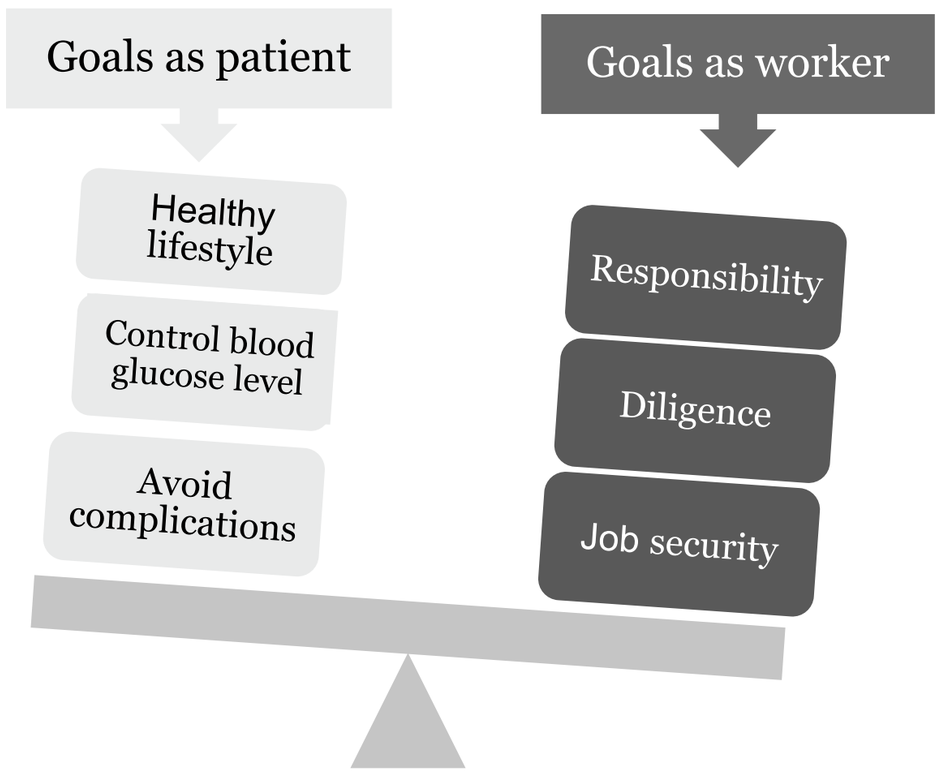
Mean years of diabetes (range): 10.3 (0.5 -28)

Diabetes medication

Drugs only: 40.5%

Drugs and insulin: 54.1%

Patient/ worker tension



Many participants found it challenging to balance between disease management and job performance. **There was a strong sentiment that it was their own problem to have diabetes, and they should not expect accommodation from their supervisors and co-workers.**

Diabetes self-management at workplace

The majority of participants considered that working conditions have strong impact on their diabetes self-management activities, and the most challenging aspects are -

- Adherence to healthy diet: many regularly consume unhealthy foods at restaurants during work hours, and some have irregular meal time.

"When we are driving long haul, we do not even have toilet break; and we do not have regular meal time as it all depends on the traffic and number of orders we have to finish." (a delivery van driver)

- Performance of physical activities: common to find it hard to perform physical activities.

"I start working at 9 am and off at 8 pm. It is already 9 pm when I arrive home and 10 pm when I finish dinner. I just do not have energy and time to exercise." (a ticketing officer at travel agent)

- Self-monitoring of blood glucose (SMBG) at workplace: some have no time to do SMBG, with some finding it embarrassing.

"I feel very uncomfortable pricking my fingers at work because colleagues sometimes kept asking questions. I preferred somewhere with privacy." (a construction site painter)

- Attend follow-up appointments: some patients had pay deducted for attending follow-up appointment during working hours.

"If I take sick leave for attending this appointment, my pay for the day will be deducted... So I use my annual leave." (a security guard)

Working conditions	Related self-management activities	Details
Working hours	Perform physical activities Adhere to healthy diet	Patients with long working hours tend to find it difficult to perform physical activities because of fatigue after work, and eat out often as they have no time and energy to prepare dinner or lunch.
Work location	Adhere to healthy diet	Patients with fixed office location find it easier to avoid eating out as they can bring home-prepared meals, especially if space, storage and re-heat facilitates are available.
Work stress	Adhere to healthy diet	Some patients tend to overeat and resort to regular snacking when they are stressed at work.
Private space	Self-monitoring of blood glucose	Patients with privacy space at work are much more willing to do SMBG, as it causes little pressure and embarrassment.
Sick leave policy	Attend follow-up appointments	Patients with no paid sick leave often had the thought of skipping follow-up appointments to avoid pay deduction.

Table 1. Summary of how certain working conditions could act as barriers/ facilitators to diabetes self-management by patients with employment.

Enhancements to Diabetes Healthcare Services

Proposed enahmcents to the existing healthcare services to facilitate better self-management by diabetic patients with employment:

- Advice on physical activities that patients could perform at workplace or at home.
- More practical and relevant dietary advice taking into account the work schedule of patients to facilitate the consumption of home-prepared meals.
- Provide stress-management or mental-wellbeing support services.
- Schedule follow-up appointments outside office hours, and all diabetes-related healthcare services on the same day (e.g. education talk, blood taking, complication screening, picking up reports, routine check-up).

Conclusion

While concerted efforts from employers/ human resource personnel and legal protection are required to improve the self-management situation of diabetic patients at work, there should be redesinign of healthcare services to better accommodate the needs of Type 2 diabetes patients with employment, so as to facilitate adherence to self-management regiment.

Reference: (1) International Diabetes Federation., IDF Diabetes Atlas, 9th edn. Brussels, Belgium: 2019.

Special acknowledgement to Dr Elaine YK Chow, Assistant Professor, Phase 1 Clinical Trial Centre and Department of Medicine & Therapeutics, Faculty of Medicine, The Chinese University of Hong Kong, for expert advice and on-site supervision.

RETHINKING GENDER IN UNIVERSAL HEALTHCARE

Authors

Javed Sumbal

Leaving No One Behind

Those most visibly affected by healthcare inequalities stand to gain the most by applying a systematic gendered approach to key building blocks of the health system and a well-designed universal healthcare (UHC) program.

Advances have been made that support greater equity in UHC, but attention has mainly been focused on financing. Gender equity requires going beyond narrow considerations of income and affordability as often conceived under UHC.

A broader and more intersectional approach is required. Countries need to address a broad range of system reforms to reach UHC, involving all of the building blocks of the health system identified by the World Health Organization (WHO), governance, financing, service delivery, workforce, information, medical products and technologies.

Power Play

As gender influences how people interact in complex, multifaceted, and context-specific ways, we can examine how these markers interact, how power plays out at multiple levels and through diverse pathways to frame how vulnerabilities are experienced by using a combination of mixed, quantitative, and qualitative methods to demonstrate the applicability of diverse research methods for gender and intersectional analysis.

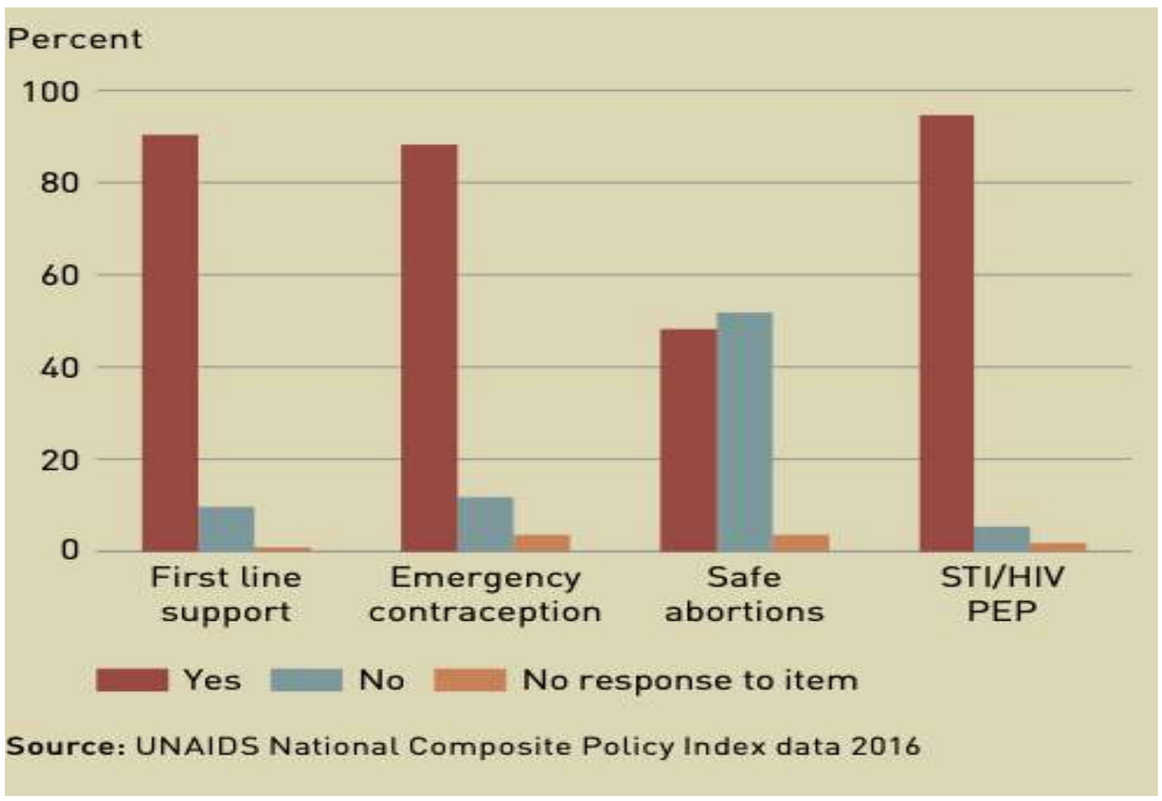


Figure1. Proportion of countries reporting to have at least one service-delivery point that provides one or more elements of postrape care (n = 114).

Well-designed UHC programs have had a positive impact on reducing inequities. A substandard design can reinforce gender inequities where women slip through the cracks of patchwork insurance schemes and too narrow a range of available reproductive health services.

Figure 2. Power-relation impact on health.

Conclusion

Experiences indicate that, for UHC to measurably improve equity, programs should include five critical factors in their design and implementation: essential-service packages, access to services, financial barriers, social barriers, and performance indicators. Strengthening health systems at multiple levels, including financing, human resources, and community involvement maximizes the benefits of UHC.

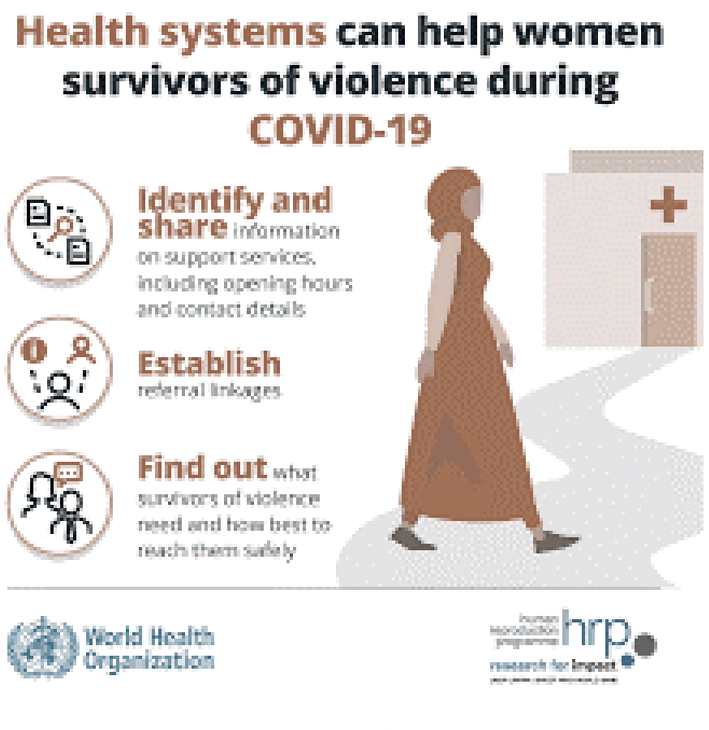


Figure 3. Comprehensive universal healthcare (UHC) adopted by health systems can help women cope during public health emergencies.

Connell, R. (1987). Gender and power: Society, the person, and sexual politics. Palo Alto: Stanford University Press Bates, L., Hankivsky, O., and Springer, K. (2009). Gender and health inequities: a comment on the final report of the WHO commission on the social determinants of health. Social Science and Medicine, 69(7), 1002–1004.

Shannon K. (2014) Universal health coverage may not be enough to ensure universal access to sexual and reproductive health beyond 2014, Global Public Health, 9:6, 661-668, DOI: 10.1080/17441692.2014.920892 Ravindran, T.S. Universal access: making health systems work for women. BMC Public Health 12, S4 (2012). https://doi.org/10.1186/1471-2458-12-S1-S4.

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HUMAN PAPILLOMAVIRUS INFECTION AND VACCINATION: KNOWLEDGE, ATTITUDES, AND PERCEPTION AMONG UNDERGRADUATE MEN AND WOMEN HEALTHCARE UNIVERSITY STUDENTS IN SWITZERLAND

Authors

Emilien Jeannot, Manuela Viviano, Marie-Christine Follonier, Christelle Kaech, Nadine Oberhauser, Emmanuel Kabengele, Pierre Vassilakos, Barbara Kaiser and Patrick Petignat

Context

The human papillomavirus (HPV) vaccination program for young girls aged 11–26 years was introduced in Switzerland in 2008. Since then, important public funds have been committed to the program, requiring an evaluation of its impact on society.

Objectives

The objective of this study was to evaluate basic knowledge and beliefs regarding the HPV infection and vaccine among male and female undergraduate healthcare students, and their attitudes toward the HPV vaccine.

Methods

• Undergraduate women and men (nursing and midwife courses) attending three schools of health sciences located in Switzerland.

• A total of 427 women and 223 men completed a web questionnaire that included questions on their sociodemographic background and basic knowledge and attitudes toward HPV infection and vaccination.

Results

- Female undergraduate students had better knowledge of HPV infection than their male counterparts did, although there was a significant gap in knowledge of the disease's mode of transmission and prevention.
- Of female respondents, 72.6% reported having received at least one dose of HPV vaccine versus 31.4% for male respondents.

Conclusions

- The results of this study revealed poor understanding among male and female undergraduate healthcare students about HPV infection, mode of transmission, and prevention.
- Our findings highlight the need to improve education on HPV for undergraduate healthcare students in order to increase awareness about the disease.

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REVENUE DERIVED FROM PROBLEM GAMBLING AS A PUTATIVE INDICATOR FOR SOCIAL RESPONSIBILITY: RESULTS FROM THE SWISS HEALTH SURVEY

Authors

Emilien Jeannot, Jean Michel Costes, Cheryl Dickson and Olivier Simon

Context

Gambling behaviours represent a significant social and economic cost and an important public health problem. Related public health policies require ongoing monitoring to determine their effectiveness, and indicators provide essential information in this process.

Objectives

Using this indicator, the present study aims to provide a first estimate of the proportion of gambling revenue generated by problem gambling in Switzerland according to the Swiss Health Survey (SHS).

Methods

Data was obtained from the SHS 2017.. Self-reported spending on terrestrial and online gambling during the past 12 months was then used to calculate the portion of gambling revenue derived from problem gambling

Results

12,191 respondents were included. Problem gambling was reported by 3,10 % of our sample, according to NODS-CLiP criteria. The findings showed that whilst 52% of people with problem gambling behaviour spend less than 100 francs per month on gambling, 31,3% of total spending is attributable to problem gambling.

		Gambling type	
		No Problem Gambling	Problem Gambling
Proportion of players by gambling type (%)		94.7	5.3
Spending by gambling type (%)		68.7	31.3

Table 1. Distribution of players and spending according to gambling type.

Conclusions

In addition to pre-existing national prevalence studies, data on spending should be made readily available by gambling operators and regulators in keeping with their regulatory obligations. The revenue structure according to gambling type should also be provided, including data from third-party gambling operators. In an interdisciplinary effort to improve public health and consumer protection, organized national structural prevention measures should be developed and evaluated.

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AUGMENTING TB SCREENING THROUGH USE OF ARTIFICIAL INTELLIGENCE AND PCR TESTING FOR TB DETECTION IN NAGPUR, MAHARASHTRA

Authors

Vaishnavi Jondhale, Shibu Vijayan, Ravdeep Gandhi, Asha Hegde, Amera Khan, Anjali Borhade, Lucky Richardson and Suman Gupta

Public private mix intervention with Artificial intelligence

In India, more than 50% of patients seek care from the private sector, and informal providers are usually the first point of care. Through Stop TB's TB REACH Wave 6 funding, PATH engaged with informal providers in slum pockets of Nagpur and equipped them with the right tools. Informal providers offer free chest X-Ray (CXR) screening. Through qXR by Qure.ai, an AI-based screening tool used in diagnostic centers, CXR films are interpreted. Confirmation of TB is completed using portable battery-operated micro PCR machine TrueLab.

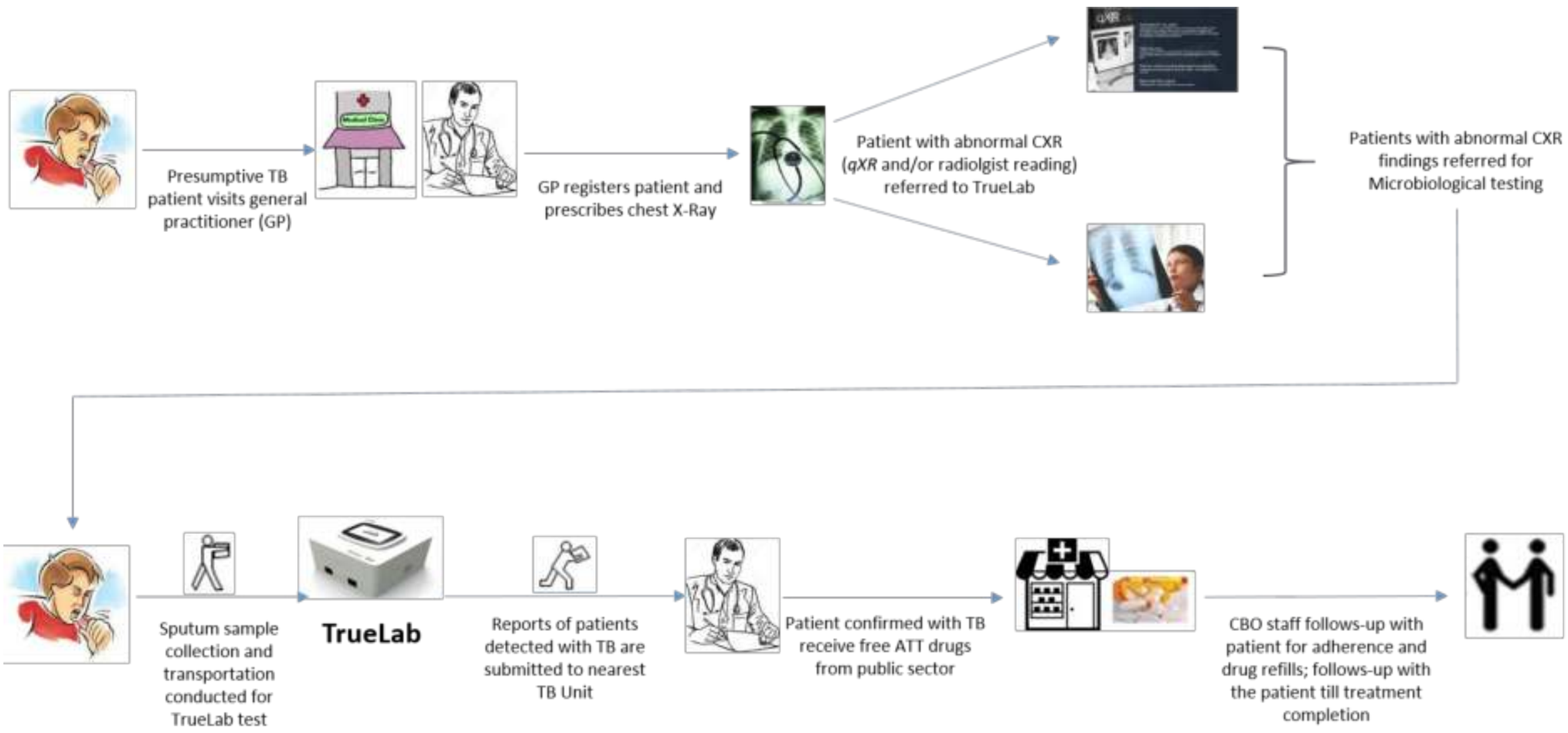

Figure 1. Project workflow with private- and public-sector components.

TB REACH intervention highlights

- All presumptive TB patients seeking care at the engaged IFPs were offered free CXR vouchers.
- Presumptive TB patients screened by radiologists in private CXR facilities and qXR technology.
- qXR reads each CXR for eight abnormalities for TB.
- Screened TB positives through the radiology report and Qure.ai sent for microbiological testing.
- Microbiological testing conducted using TrueLab placed in public sector for confirmation of TB.
- Patient confirmed with TB notified in public sector and treatment initiated in public facility.
- Patients followed up for treatment adherence and outcomes

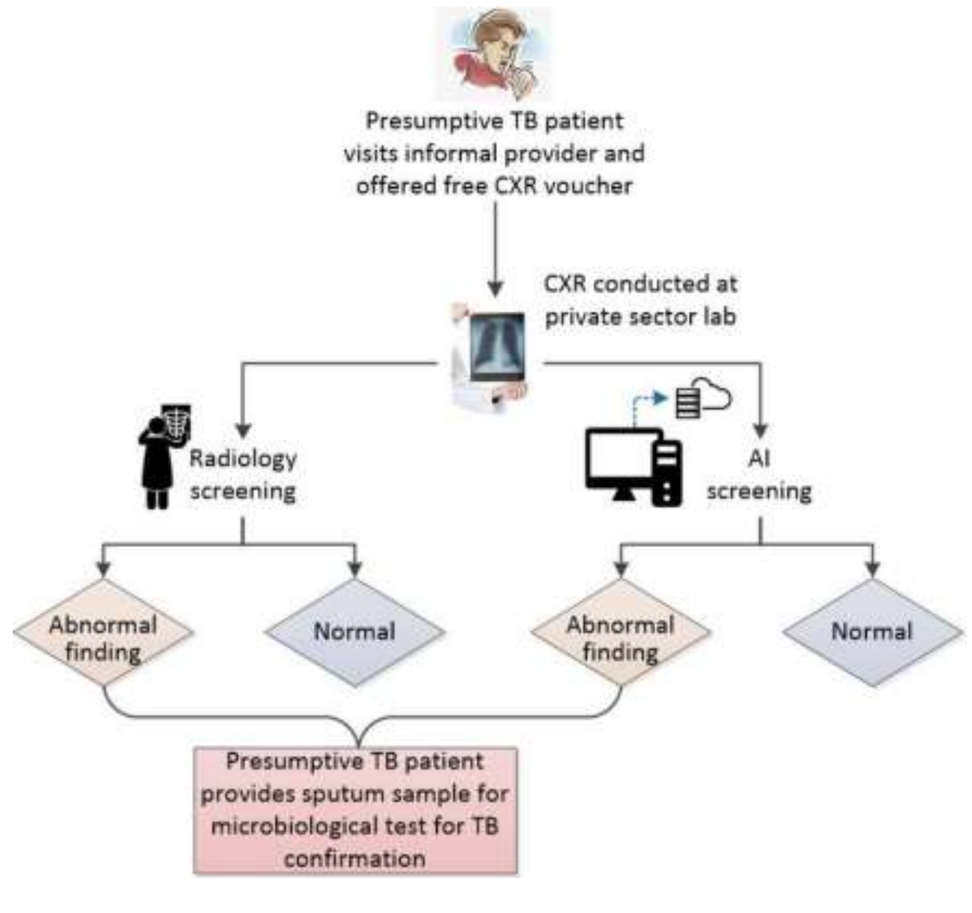

Figure 2. qXr and radiology detection process flow.

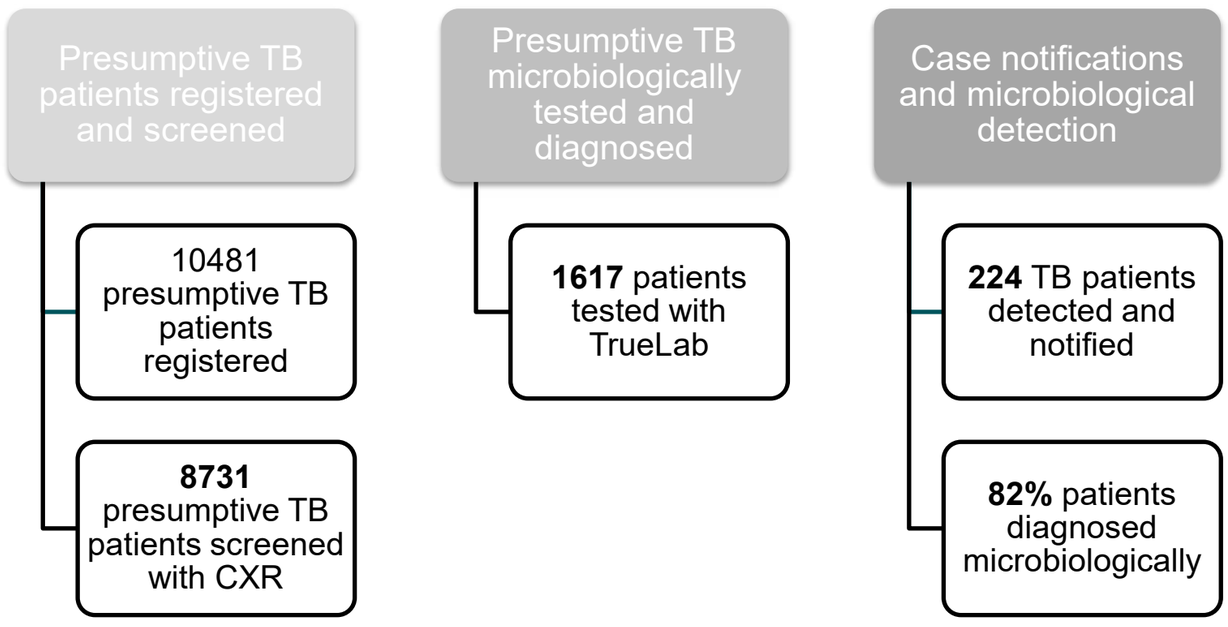

Figure 3. Project output.

Project impact

- 50% increase in microbiological case notifications and 20% increase in all forms of notifications in 2019 compared to 2018 in the public sector.
- Informal provider referral system linked with public sector for TB case notifications and treatment.
- Potential option of screening and diagnosing TB patients in periurban and rural geographies with limited human resources to find millions of missing TB cases.

Closing remarks

- AI tools can be effective in resource-constrained settings where availability of radiologists is limited to nonexistent.
- There is a need to scale up AI and point-of-care diagnostic tools to accelerate TB elimination.

Acknowledgements

Nagpur Municipal Corporation , Disha Foundation, Chest X-Ray laboratories, Qure.ai and Stop TB Partnership.

ACCELERATING ACCESS TO QUALITY CARE FOR PRESUMPTIVE PAEDIATRIC TUBERCULOSIS PATIENTS THROUGH IMPROVED DIAGNOSTIC STRATEGIES IN INDIA

Accelerating Access to Rapid and High-Quality Diagnostic Services for Diagnosis of Pediatric TB - Experience From India

Authors

Aakshi Kalra[1], Rajashree Sen[1], Debadutta Parija[1], Sarabjit Singh Chadha[1], Sanjay Sarin[1]and Catharina Boehme[2]

[1] Foundation For Innovative New Diagnostics, New Delhi Delhi, India
[2] Foundation For Innovative New Diagnostics, Geneva, Switzerland

Introduction

The Sustainable Development Goals (SDGs) prioritise well-being of vulnerable populations including children in the 2030 agenda. The goal 3 promotes universal health coverage and specifically targets reduction in tuberculosis (TB) incidence among all populations including children. However, in the current scenario, diagnosis of TB in children remains a challenge since signs and symptoms of TB are non-specific, significant proportion of extrapulmonary TB cases, difficulty in obtaining samples and poor sensitivity of the available diagnostic with the exception of more sensitive molecular diagnostic tests. This results in underdiagnosis of TB in children.

To overcome these challenges, a large-scale project was implemented in 10 major cities across India (in a phased manner) under which upfront rapid and highly sensitive molecular TB test (Xpert MTB/RIF) was offered free of cost for early and improved diagnosis of TB among children from April 2014 to March 2018.

Figure 1. Map showing the geographies under the paediatric project (red flags show initial 4 project cities; blue flags show the cities where the project was extended in 2016-2017.

Methods

Several low-cost outreach and education interventions were undertaken to increase diagnostic uptake by providers catering to paediatric population. A high throughput lab was established in each of the project cities and linked to various providers in the public and private sector, through rapid specimen transportation and electronic reporting. In addition to contined medical education (CMEs) sessions, trainings were organized for the providers on extra pulmonary sample collection.

Figure 2. Project model.

Results

- A total of 103,045 specimens were tested from 94,415 presumptive pediatric TB patients on Xpert MTB/RIF
- The presumptive cases' median age was 8 years (IQR = 4,11). Approximately 54% of the cases were males
- A total of 6,270 (6.6%) TB patients were detected, of which 545 (8.7%) were rifampicin resistant. Overall detection rates on Xpert MTB/RIF were three-fold higher than smear microscopy (6% vs 2%).
- For 94% patients, results were reported within 24 hours of sample receipt at lab.
- Of the diagnosed, 89% were initiated on treatment.
- Around 50% of the samples were non-sputum
- The number of public and private sectors providers engaged under the project increased from 43 in Apr'14 to 1416 by Mar'18. Over 60% engaged providers were from the private sector.

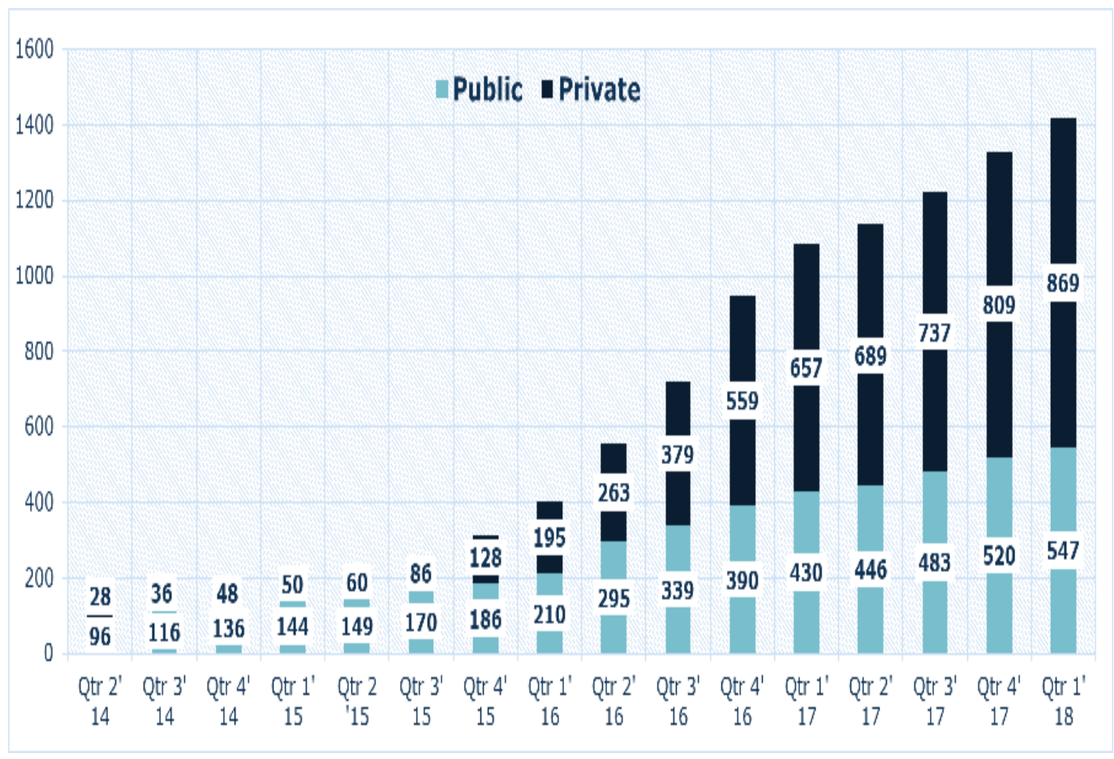

Figure 3. Provider engagement classified by type of providers/facilities engaged; The graph reflects data as follows: from Q2 14 to Q1 16- from 4 project cities; Q2 16 onwards -from 7 project cities; from Q3 16 - from 9 project cities ; from Q3 17' onwards - from 6 cities (post transition of first 4 sites to the National TB Programme and addition of 10th site to project).

Conclusion

This project, which was one of the largest initiatives globally among paediatric population, demonstrated the feasibility of providing and sustaining upfront access to rapid and more sensitive TB diagnostics. Introducing innovative technology and rethinking the TB diagnostic process in India has enabled three times as many children to be diagnosed with TB than using the available tests. The initial findings from the project facilitated a policy decision by India's National TB Programme mandating the use of GeneXpert as a primary diagnostic tool for TB in children.

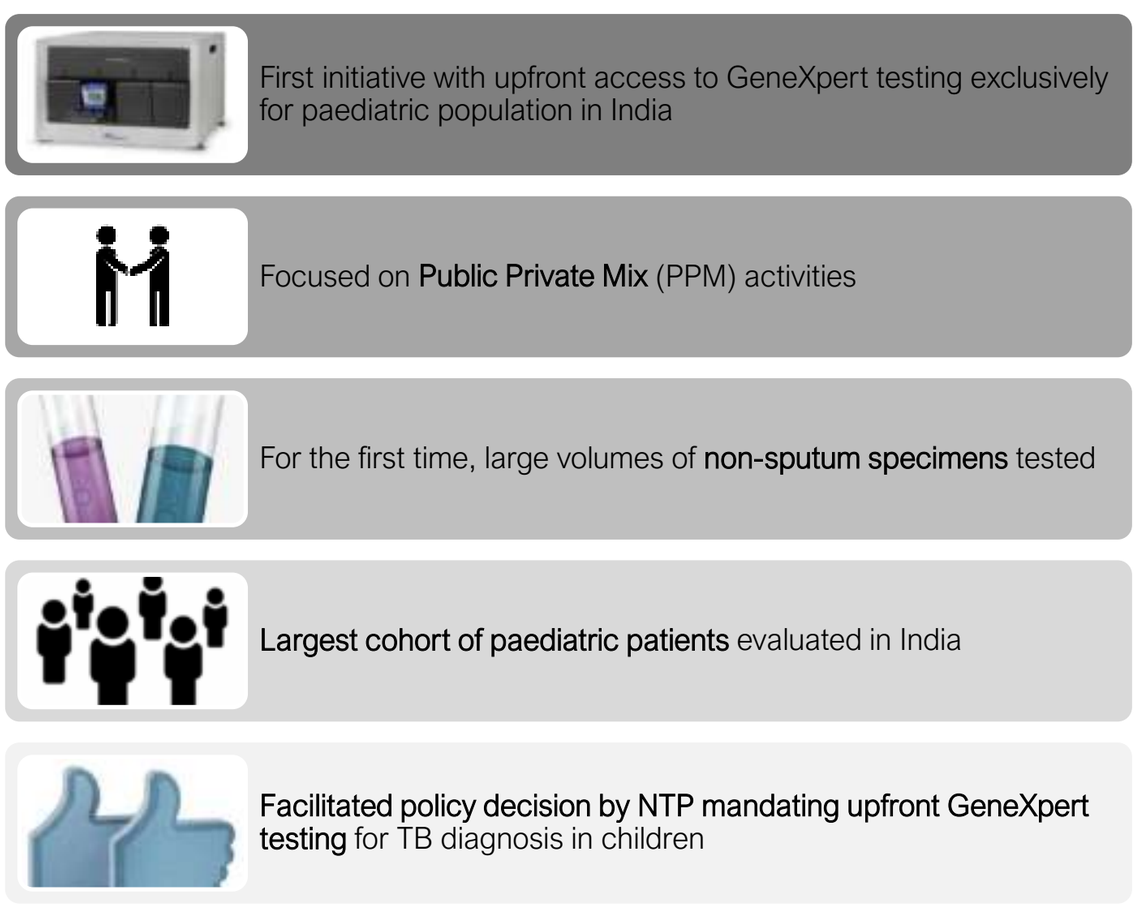

Figure 4. Uniqueness of the project.

ELIMINATION OF BOTTLENECKS IN HIV PREVENTION,CARE AND TREATMENT: THE MOBILE HEALTH OPPORTUNITY IN KENYA

A Literature Review

Authors

Lucy Kaluvu
Supervisor: Hermen Ormel KIT Royal Tropical Institute

Introduction

HIV/AIDS is a leading cause of death and disability in Kenya. Almost 2 million Kenyans are living with HIV. Nearly 100,000 AIDS-related deaths occur annually. To reduce the HIV burden, access to good quality services is paramount. With increasing mobile phone penetration in remote areas and near-100% penetration elsewhere, mobile health (mhealth) opportunities offer promise in addressing challenges in access and utilization. Mhealth is the application of medical and public health through mobile communication devices. Mobile phones are portable, with ease of access and sharing capabilities, and hence can reach more people.

Kenya has a generalized HIV epidemic with concentrated epidemics among key populations (KPs). Young adults (15-24 years) have a higher risk of acquiring HIV. KPs constitute female sex workers (FSW), men having sex with men (MSM), people who inject drugs (PWID) and male sex workers (MSW). Reports show that the likelihood of contracting HIV is more than twenty times higher among PWIDs and MSMs when compared to the general population. Moreover, the risk of contracting HIV for FSWs is ten times higher than the general population.

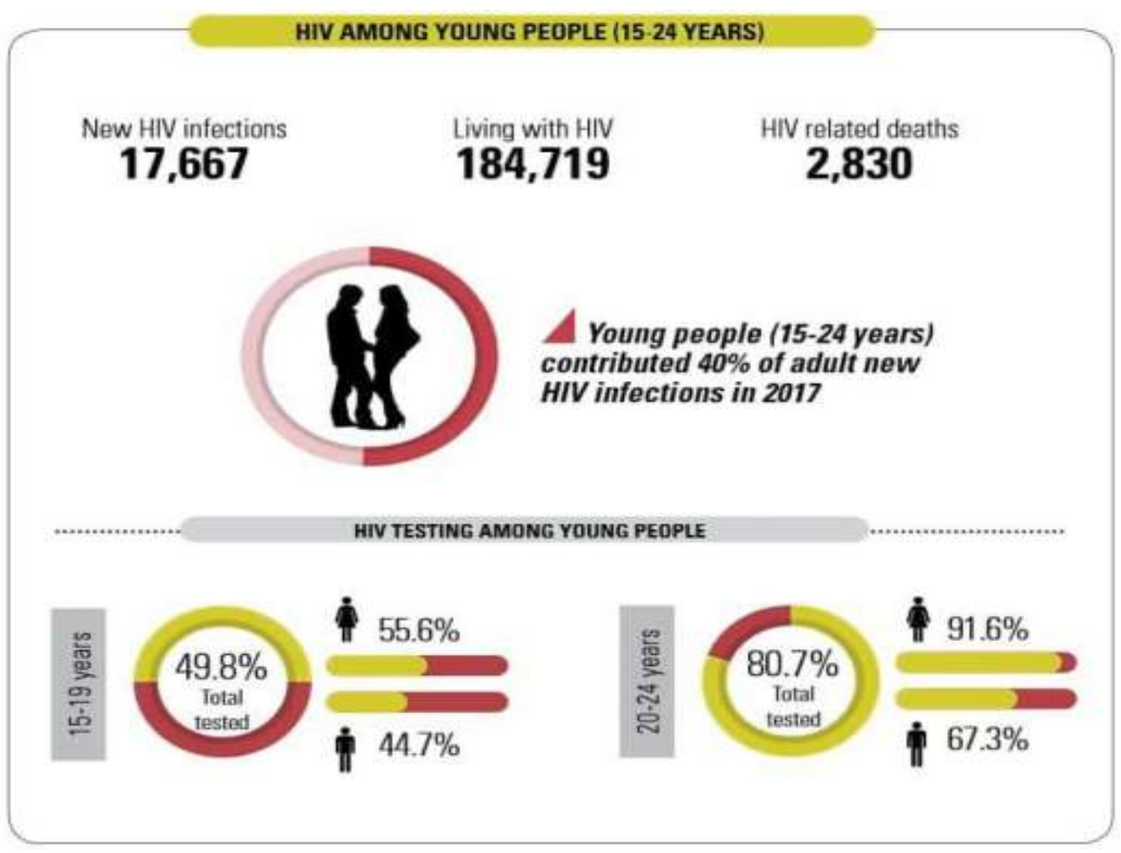

Figure 1: HIV and HIV testing among young people (15-24 years), Kenya 2017.

Methodology

- The Levesque model of access to health services was applied to identify the barriers and facilitators to access of HIV services.

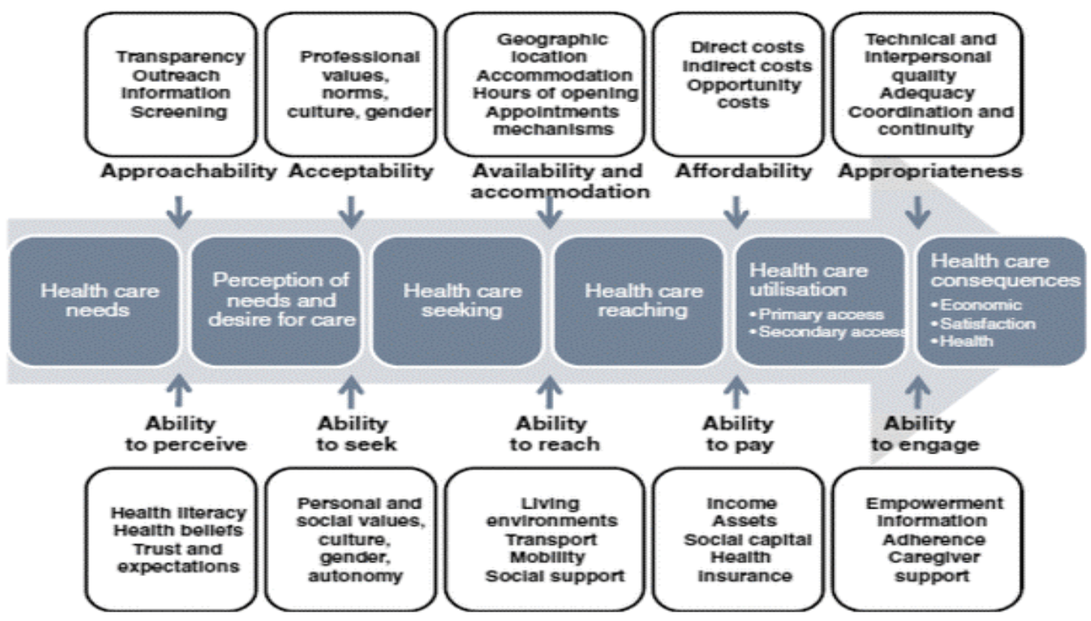

Figure 2: The Levesque model of access to health services, Levesque et al.

- The Mhealth and ICT framework was applied to identify the different applications of mobile phone technology in health.

Figure 3: Mhealth and ICT framework, Labrique et al.

- The World Health Organization(WHO) Digital Health Intervention Guidelines 2019 report was instrumental in classifying evidence and study quality evaluation.

"Health applications can play a vital role in health systems strengthening. They can be applied in client behavior change communication, provider communication, education and training and to promote supply chain transparency. To ensure proper scale up of mhealth interventions, proper implementation, monitoring and evaluation, is key in addressing 'mhealth pilotitis"

Findings

The main demand barriers to the access of HIV services identified were:

- Low income/poverty
- Low literacy levels
- Gender factors
- Cultural factors

The main supply side barriers identified were:

- Poor professional value
- Stigma and discrimination
- Low provider capacity and infrastructure

- Mhealth applications can be used to motivate behavior change and improve treatment adherence.
- They also reduce treatment delays, case referrals, and facilitate remote training of health workers.
- Technical, infrastructural, and design challenges affect the acceptability, feasibility, and scalability of mhealth interventions.

Recommendations

- The government should address infrastructural challenges such as electricity supply coverage, poor quality roads and poor human resource allocation, in order to allow easier integration of mhealth interventions into the existing healthcare system.
- The current national e-health strategy should incorporate mhealth evidence evaluation guidelines, with reference to the WHO Digital Health Intervention Guidelines. This will ensure prioritization of studies whose evidence is high.

Closing remarks

"I look forward to engaging with you all. Working at the interface of digital and global health, I truly believe that digital health is the FUTURE of healthcare delivery"

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DEVELOPMENT OF HEALTH INFORMATICS WORKFORCE MODEL FOR NAMIBIAN PUBLIC HEALTH SECTOR

Author

Etuna Kamati

Introduction

Health is a crucial element of human life and global concern.
Access to public health services is a basic right of every Namibian citizen.
Health care provision is knowledge intensive and requires adequate human capital development, modern technology adoption and implementation for efficient and effective services delivery.
Lack of operational knowledge of these modern technologies may render any huge investment within the sector useless.
Proper implementation of Information Technology in the health sector has a powerful potential to enhance organisational efficiency.
Health informatics focuses on how data are created/gathered, processed, stored, communicated and analysed using ICT systems to provide knowledge for planning and decision making in the health sector.
The introduction of health informatics has enabled sustainable qualitative data gathering and processing for healthcare knowledge discovery, sharing and decision making.
However, the lack of an ICT and Informatics skilled health workforce has remained a major setback in developing countries including the Namibian health care sector in harnessing the opportunities provided through health informatics for effective and efficient healthcare services delivery

Figure 1: Careers in Health Informatics (Source: www.stoodnt.com).

Research Objectives

The purpose of this study is to assess the skills of health informatics workers in the Namibian health sector, so as to establish what skills are available and in what quantities.
The study also aims to identify the types of technical skills needed and how they can be developed.

- Research sub-objectives:
- To evaluate existing health informatics skills of the public healthcare workforce and health systems.
- To analyse public healthcare workforce tasks and functions requirement and the appropriateness of available informatics skills.
- To examine challenges of informatics skills gap in relation to available health systems for effective healthcare services delivery.
- To develop a health informatics skills model for effective and efficient healthcare services delivery.

Theoretical Framework

- The Cultural Historical Activity Theory (CHAT) also known as Activity Theory will be used as a guide for this research.
- CHAT was founded by Russian psychologists namely: Vygottsky, Leont'ev and Luria.
- It places an emphasis on networks, interactions and boundary crossings between activity systems enabling us to understand interactions in their social context, multiple contexts and cultures, as well as the dynamics and development of particular activities.
- CHAT will be used as a guide for data collection and for data analysis.

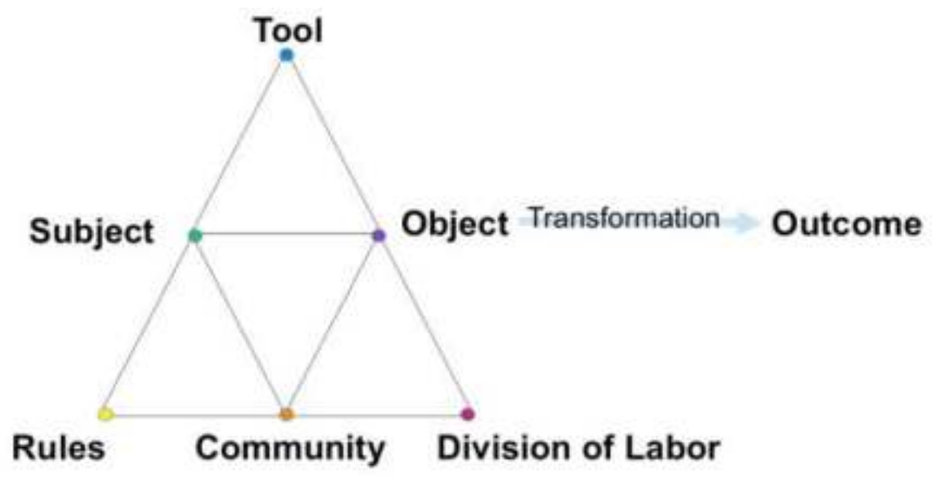

Figure 2: Cultural Historical Activity Theory (Source: www.researchgate.net).

Research Methodology and Design

The interpretivist approach/paradigm will be applied to this study.
The research will be conducted using the case study research design which falls under qualitative research methods.

Data Collection Techniques

- Crystallisation will be used to increase information accuracy and provide the benefit of being able to validate findings by comparing information gathered from different sources.
- Data collection techniques that will be used include:
  - semi-structured interviews,
  - observations,
  - documents analysis,
  - and questionnaires.

Sampling Method

- Purposive and snowball sampling methods will be used in order to get the best representation of the subjects from whom data will be collected.
- Purposive sampling also known as judgemental sampling, involves the deliberate selection of subjects by the researcher based on predefined criteria.
- Snowball sampling also referred to as networking, involves asking subjects to provide access to others who may meet the study criteria.

Study Participants

The suggested participants from which data will be collected are those who are involved in the creation, gathering, analysis, processing, communication and storage of data in the public health care sector.
Those who use information and knowledge that is derived from health informatics data for the purposes of decision making will also be investigated.
The focus will be on:

- Clerical or administrative staff (e.g. data entry clerks)
- Professional healthcare workers in the public sector (doctors, nurses, pharmacists, etc.)
- IT staff members in public health sector (systems analysts, systems administrators, database administrators and network administrators)

Category of Data Sources	Selected Data Sources Per Category
Health Centres	Central Hospital, Katutura Hospital, Oshakati State Hospital, etc.
Government Offices	Ministry of Health and Social Services (MOHSS) Head Office
Medical Aid Providers	Public Service Employee Medical Aid Scheme (PSEMAS)
Public Schools	Schools thathave a primary health care facility/function
Laboratories	Namibia Institute of Pathology (NIP)
Pharmacies	Central Hospital Pharmarcy, Katutura Hospital Pharmarcy, Oshakati State Hospital Pharmarcy

Conclusion

This research aims to produce a model for health informatics workforce (HIW) skills that can be used to provide appropriate training that will equip HIW for effective service delivery in the health sector. The next phase is for data collection.

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NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY

THE RELATIONSHIP BETWEEN CHANGES IN PREGNANCY-RELATED ANXIETY AND DEPRESSION AND PRETERM BIRTH

Authors

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What is Already Known About the Topic

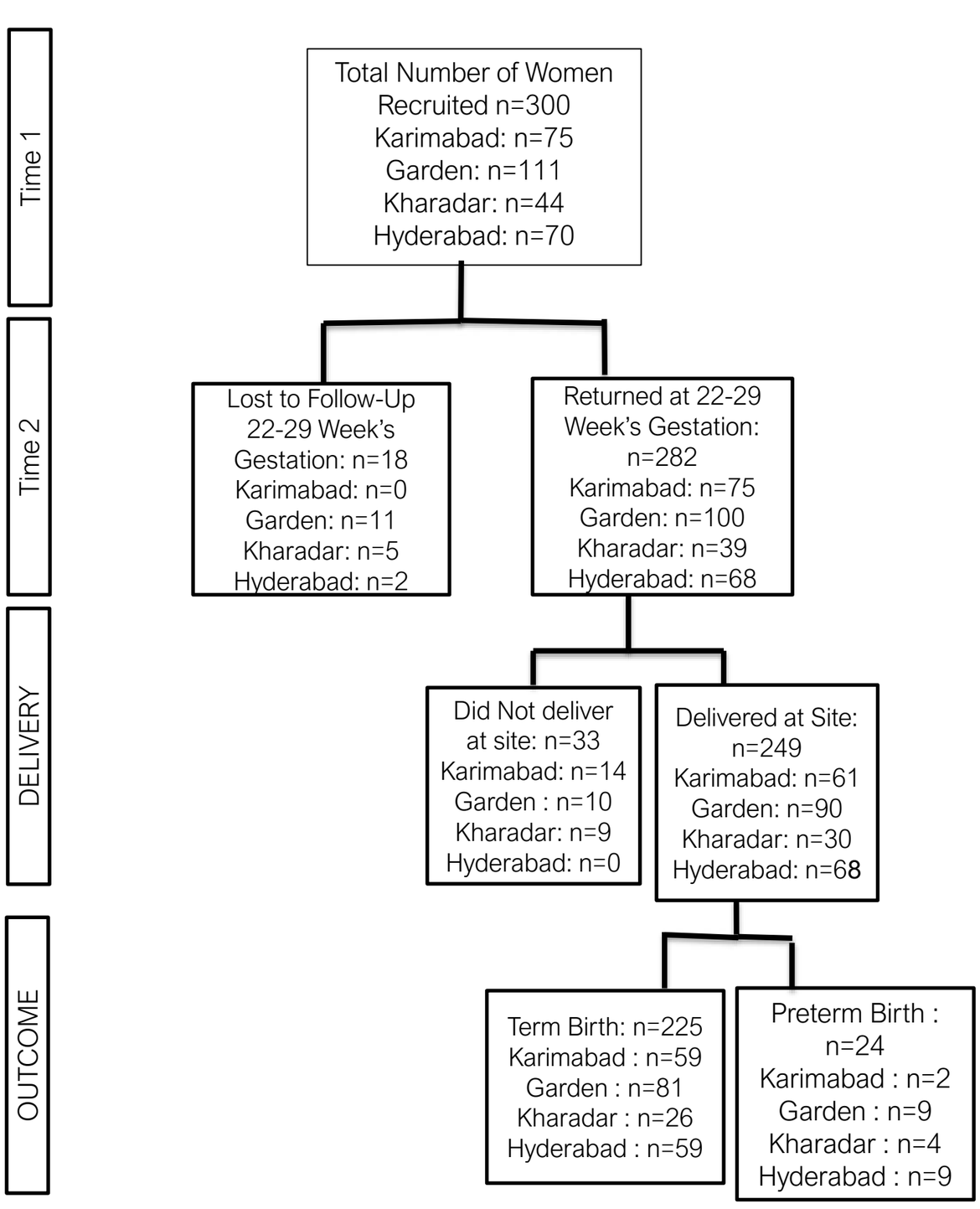
- Levels of pregnancy-related anxiety, depressive symptoms, and perceived stress may change over the course of pregnancy
- Women may experience a dampening of psychosocial distress over the course of pregnancy

Research Questions

1. Do changes in pregnancy-related anxiety and antenatal depressive symptoms during pregnancy in the Pakistani context influence the risk of having a preterm birth?
2. What is the relationship between the various components of the pregnancy-related anxiety scale and preterm birth?

Method Participants

300 low risk pregnant women were recruited from four centers of Aga Khan Hospital for Women and Children in Pakistan including Hyderabad 70 (23%), Garden 111 (37%), Kharadar 44 (15%) , and Karimabad 75 (25%).



Measures

- Pregnancy-related anxiety (PRA; PRA scale)
- Depression (Edinburgh Perinatal Depression Scale (EPDS)),
- Perceived stress (PS; PS scale)

Design

- Prospective cohort design recruited at 12-19 weeks and at 22-29 weeks gestation.

Data Analysis

- SPSS V25
- Paired t-tests
- Pearson correlations
- Multiple logistic regression
- Process analysis

Conclusion

Women's anxiety about fetal heath was a significant predictor of PTB, along with changes in EPDS. Health care providers need to reorganize their care practices to address maternal concerns about fetal health early in pregnancy and monitor changes in depression during pregnancy to identify women at risk of PTB.

Results Descriptive data

Of the 249 women, 24 gave birth preterm (9.6%). In terms of age, 2.3% were under 20 years old, while 30.1%, 41.0%, and 26.1% of the women were aged 20-24, 25-29 and 30+ years, respectively. The largest ethnic group was the Muhajirs (30.5%), followed by Sindhi (19.7%) and Memon (14.1%).

		Model Adjusted for Perceived Stress Only		Model with Covariates and Perceived Stress Only		Model with Predictors Adjusted for Covariates and Perceived Stress	
Factors	Categories	p-value	OR (95% CI)	p-value	OR (95% CI)	p-value	OR (95% CI)
Mother's highest education attained				0.051		0.079	
	Primary education or None			0.026	10.8(1.32-88.36)	0.037	9.5(1.14-78.24)
	Secondary or high school			0.269	3.6(0.38-33.36)	0.271	3.6(0.37-34.04)
	College/University completed			0.186	4.2(0.5-34.98)	0.235	3.6(0.43-30.82)
	Postgraduate degree (Ref)						1.0
Family type	Nuclear family			0.023	2.8(1.15-6.73)	0.050	2.5(1.00-6.16)
	Extended (reference)				1.0		1.0
Perceived stress (unit increase)		0.168	1.1(0.98-1.14)	0.406	1.0(0.96-1.11)	0.198	1.1(0.97-1.15)
Pregnancy-related anxiety (unit increase)		0.089	1.1(0.99-1.18)			0.214	1.1(0.97-1.17)
Depressive symptoms (unit increase)		0.026	0.9(0.80-0.99)			0.082	0.9(0.82-1.01)
	Constant		0.102		0.02		0.02

Table 1:Predictive model for preterm birth given changes in pregnancy-related anxiety and antenatal depressive symptoms during pregnancy adjusted for perceived stress.

The above table shows change in perceived stress has protective influence on the relationship between change in depressive symptoms and preterm birth but not on effect of change in pregnancy-related anxiety.

	Model with Predictors Only		Model Adjusted for Perceived Stress		Model Adjusted for Perceived Stress and Covariates	
Factors Categories	P-value	OR (95% CI)	p-value	OR (95% CI)	p-value	OR (95% CI)
Mother's highest education attained					0.055	
Primary education or None					0.030	10.4(1.25-86.86)
Secondary or high school					0.293	3.4(0.35-31.85)
College/University completed					0.216	3.9(0.45-32.71)
Postgraduate degree (ref)						1
Family type						
Nuclear					0.067	2.4(0.94-5.9)
Extended (Ref)						1
Perceived stress			0.198	1.1(0.97-1.13)	0.210	1.1(0.97-1.14)
Pregnancy-related Anxiety: fetal health concerns	0.031	1.4(1.03-1.78)	0.050	1.3(1.00-1.75)	0.078	1.3(0.97-1.72)
Depressive symptoms	0.070	0.9(0.84-1.01)	0.026	0.9(0.81-0.99)	0.085	0.9(0.82-1.01)
Constant		0.10		0.10		0.02

Table 2: Predictive model for preterm birth given changes in dimensions of pregnancy-related anxiety and depressive symptoms during pregnancy adjusted for perceived stress and covariates.

The above table shows mother's concerns/worries about fetal health', emerged as a significant predictor of preterm birth.

References

Hanif et al. (2017)
Purisch & Gyamfi-Bannerman(2017)
Quinn et al. (2016)

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PATIENTS PROFILE, OUTCOMES AND RISK FACTORS FOR MORTALITY IN CRITICALLY–ILL WOMEN ADMITTED TO AN OBSTETRIC HIGH DEPENDENCY UNIT IN A LOW RESOURCE SETTING

Authors

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Introduction

Sierra Leone faces the highest maternal mortality in the world. Despite this high burden, the potential role of obstetric critical care and high dependency units (HDUs) in low–resource settings remains scarcely explored.
This study aimed to investigate the patient profile, clinical outcomes and risk factors for mortality of parturients admitted to an obstetric HDU in low-resource setting.

Methods

A retrospective cohort study including all consecutive obstetric critically–ill patients admitted to the HDU of Princess Christian Maternity Hospital in Freetown, Sierra Leone, from 02/10/2017 to 02/10/2018, was conducted. Primary outcome was mortality during HDU stay. Univariate and multivariable analyses were performed using logistic regression models.

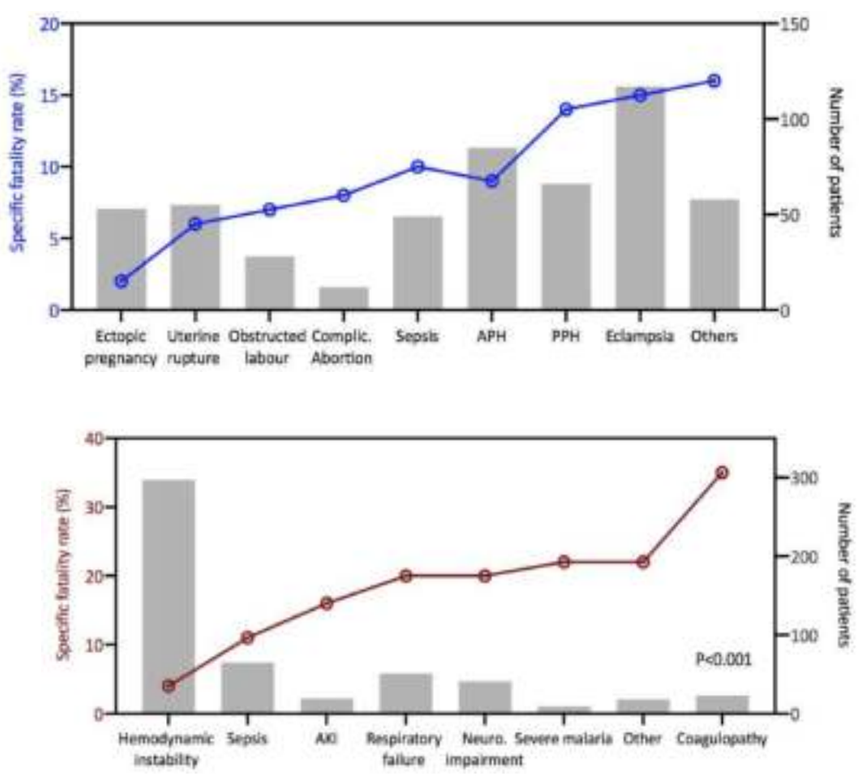

Figure 3. Main obstetric diagnosis in patients admitted in HDU by number of admissions (n, showed in grey bars) and specific fatality rate (%, showed in blue). Distribution of the number of patients (n, showed in grey bars) and mortality (%, showed in red) by reason for referral to HDU.

At multivariable analysis, being referred from the ward rather than the operating room (OR 6.10, 95%CI 2.39-16.30), being responsive to pain on AVPU scale (OR 5.13, 95%CI 1.68-15.17) or unresponsive (OR 4.97, 95%CI 2.14-11.94) at admission, receiving oxygen (OR 2.66, 95%CI 1.19-5.98) or vasopressors (OR 3.88, 95%CI 1.73-8.67) during the stay were risk factors for mortality, while higher SpO2 (OR 0.95, 95%CI 0.91-0.99) and receiving antibiotics (OR 0.31, 95%CI 0.09-0.91) were associated with lower risk.

Variables	Status		Mortality			
	Dead	Alive	Unadjusted OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
N	55	468	-	-	-	-
Source:						
Operation room	23 (6.6)	323 (93.4)	Reference		Reference	
Outpatient department	10 (18.9)	43 (81.1)	3.26 (1.40 to 7.17)	0.0005	1.92 (0.59 to 5.94)	0.0007
Ward	22 (17.7)	102 (82.3)	3.03 (1.61 to 5.68)		6.10 (2.39 to 16.30)	
Obstetric early warning score: [c]					-	
Green	3 (2.7)	107 (97.3)	Reference			
Yellow	5 (7.5)	62 (92.5)	2.88 (0.68 to 14.41)	0.0008		0.42
Red	46 (13.9)	284 (86.1)	5.78 (2.06 to 24.14)			
SpO2 (%) [ad]	96 (90-98)	98 (97-99)	0.91 (0.88 to 0.94)	<0.0001	0.95 (0.91 to 0.99)	0.02
AVPU: [g]						
Alert/Vocal	17 (5.1)	315 (94.9)	Reference		Reference	
Pain	9 (13.0)	60 (87.0)	2.78 (1.14 to 6.40)	<0.0001	5.13 (1.68 to 15.17)	0.0002
Unresponsive	26 (25.0)	78 (75.0)	6.18 (3.22 to 12.14)		4.97 (2.14 to 11.94)	
Oxygen:						
No	23 (5.7)	384 (94.3)	Reference		Reference	
Yes	32 (27.6)	84 (72.4)	6.36 (3.56 to 11.54)	<0.0001	2.66 (1.19 to 5.98)	0.02
Vasopressors:						
No	32 (7.0)	423 (93.0)	Reference		Reference	
Yes	23 (33.8)	45 (66.2)	6.76 (3.62 to 12.52)	<0.0001	3.88 (1.73 to 8.67)	0.001
Antibiotics:						
No	49 (11.8)	365 (88.2)	Reference		Reference	
Yes	6 (5.5)	103 (94.5)	0.43 (0.16 to 0.98)	0.04	0.31 (0.09 to 0.91)	0.03

Figure 4. Analysis of risk factors associated to mortality among women admitted to the HDU of PCMH in Freetown (Sierra Leone) from 2nd October 2017 to 2nd October 2018.

Closing remarks

Our data can contribute to tackle the scarcity of data on in-hospital obstetric critical illness that jeopardize the adoption of solutions along the whole spectrum of care. Critically-ill parturients admitted to a HDU in Sierra Leone are generally young and referred in red EWS code. One in ten admitted patients died in HDU. Main risk factors for HDU mortality were poor neurological and respiratory status at admission.

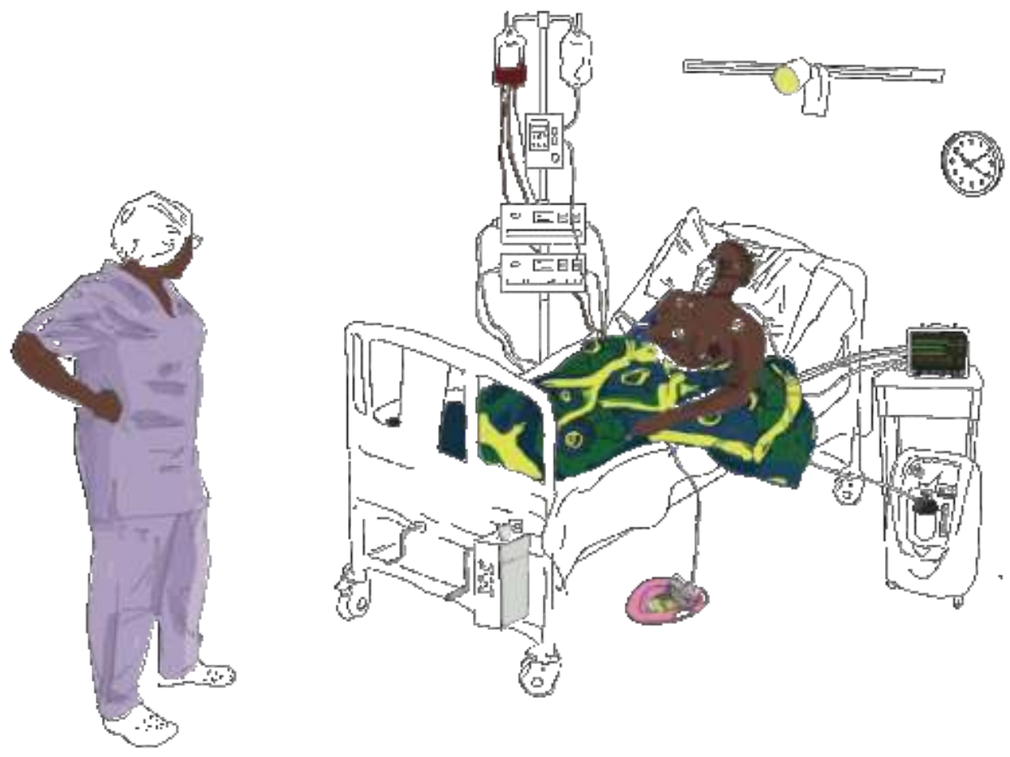

Figure 1. Simplification of a PCMH HDU bed.

Results

523 patients (median age 25 years, IQR 21-30) were admitted to HDU, 65.1% of them was referred in red Early Warning Score (EWS).
Mortality was 10.5%.

ADMISSION CHARACTERISTICS	N (%) or Median (IQR)
Age (years) [ab]	25 (21-30)
Reason for referral to HDU:	
Hemodynamic instability	297 (56.8)
Sepsis	65 (12.4)
Acute kidney failure	19 (3.6)
Neurological impairment	41 (7.8)
Respiratory distress	51 (9.8)
Severe malaria	9 (1.7)
Coagulopathy	23 (4.4)
Other diagnoses	18 (3.4)
Source	
Operation room	346 (66.2)
Outpatient department	53 (10.1)
Ward	124 (23.7)
Admission time	
during night shift	156 (29.8)
during weekend	129 (24.7)
CLINICAL PARAMETERS	
Obstetric early warning score [c]	
Green	110 (21.6)
Yellow	67 (13.2)
Red	330 (65.1)
Temperature (°C) [ae]	36.5 (36.0-36.9)
Heart rate (beats per minute) [ae]	113 (99-129)
Respiratory rate (breaths per minute) [af]	28 (24-34)
SpO_2 (%) [ad]	98 (97-99)
SpO_2/FiO_2 ratio [af]	477 (462-471)
AVPU scale [g]	
Alert	259 (51.3)
Voice	73 (14.4)
Pain	69 (13.7)
Unresponsive	104 (20.6)
Systolic blood pressure, mmHg [ag]	124 (110-142)
Diastolic blood pressure, mmHg [ag]	78 (60-90)
BIOLOGY	
Lactates, mmol/L [ah]	6.0 (3.5-10.1)
Hemoglobin, g/dl [ai]	8.3 (6.4-10.5)

[a] median (IQR); Data not available in [c]11, [c]16, [d]15, [e]17, [f]19, [g]18, [h]365 and [i]70 patients

Figure 2. Characteristics at admission to the HDU of PCMH of the 523 patients in study.

The primary epidemiological findings are summarised as follows:
(1) 1 HDU admission per 14 deliveries, with a crude mortality rate of 10.5%;
(2) independent predictors of mortality were poor neurological and respiratory status at admission, while a red code at OEWS was not a predictor of mortality;
(3) the use of antibiotics during stay and higher SpO2 on admission were positive modifiable factors for survival.

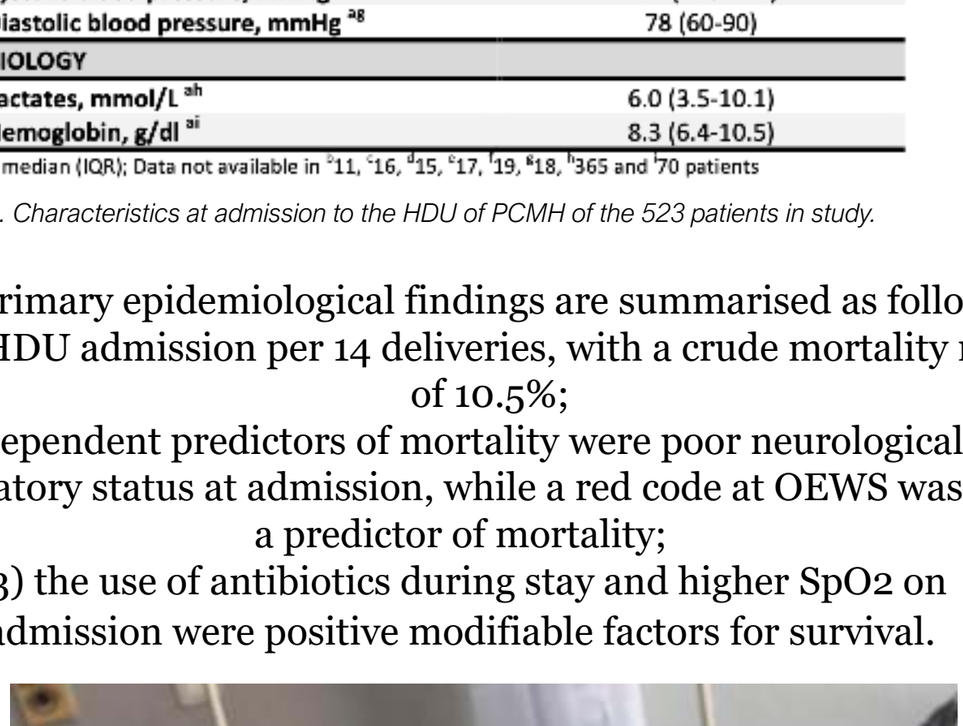

Figure 5. A CUAMM doctor performing obstetric ultrasound in HDU.

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BREAKING STEREOTYPES AND REMODELLING THE CONCEPT OF SEXUAL VIOLENCE PREVENTION BY BUILDING RESILIENCY AND DEFENSE SKILLS AMONG VULNERABLE WOMEN IN UGANDA

A Realistic Approach on the Fieldwork 2020

Author

Numa Memisevic

Research Background

Recent population derived data from Uganda indicate that 51% of women aged 15-49 have experienced physical violence at some point in their lives, and 22% of women in the same age group have experienced a sexual assault [1]. An empowerment approach to self-defense training contributes to the anti-violence movement in multiple ways: providing a pathway to increase womens' and girls' safety and their potential for becoming effective social change agents,providing an informed and embodied understanding of violence, and offering comprehensive options to recognize, prevent, and interrupt violence [2].

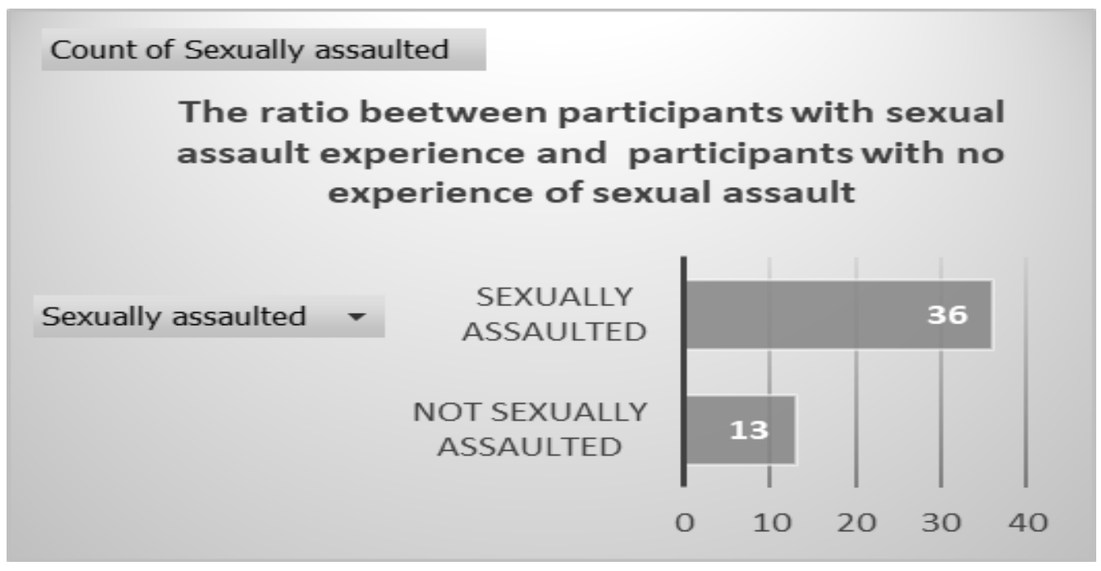

Figure 3 The ratio between the participants being sexually assaulted and the participants without experience of sexual assault.

Aim and Methodology

The aim of the research was to test a novel empowerment-based sexual assault prevention training initiative targeting women at high risk for sexual violence in Uganda.
This intervention focused on both non-physical and physical measures. The research has been conducted in a period of September 2020. The self-defense training program lasted 2 weeks.
We employed a cluster-randomized trial design in order to ascertain the training's effectiveness in improving self-efficacy, deployment readiness, self-esteem andmitigation of sexual assault.
We conducted 60 in-depth interviews and 24 self-defense trainings. The interviews were recorded and safeguarded unter the code so enabled the confidentiality of data.
The participants were selected based on previously established eligibility criteria. Hospitals in the Kimombasa region, the Butabika Psychiatric Hospital in Nakawa region as well Makarere University Hospital in central area of Kampala in Uganda served as site clusters.

Women 's view on self-defense training and their view of being a woman as a social actor in defending themselves against the perpetrator

90% of interviewed participants responded that because they are women they are at higher risk to be sexually assaulted

However, half of the women who answered that they are at higher risk to be assaulted believed that with the learned skills they can defend themselves

85% of rapes were reported to authorities and out of 85% of the committed rapes only 10 % were been processed and **3%** of the sexual assaults were convicted

60% of participants were familiar with the term of female empowerment and the meaning of self-defense training

Reported crimes	Affected self-esteem after the violence	Affected Vulnerability after violence	Increased self-esteem after the training	Increased resilience after training
no-50%	no-50%	yes-100%	yes-85%	yes-45%
yes-50%	yes-50%	no-0%	no-15%	no-55%

Figure 4.Overview of the view 's of women on their seld-confidence, self-worth before and after intervention. Displayed other information on reported crimes.

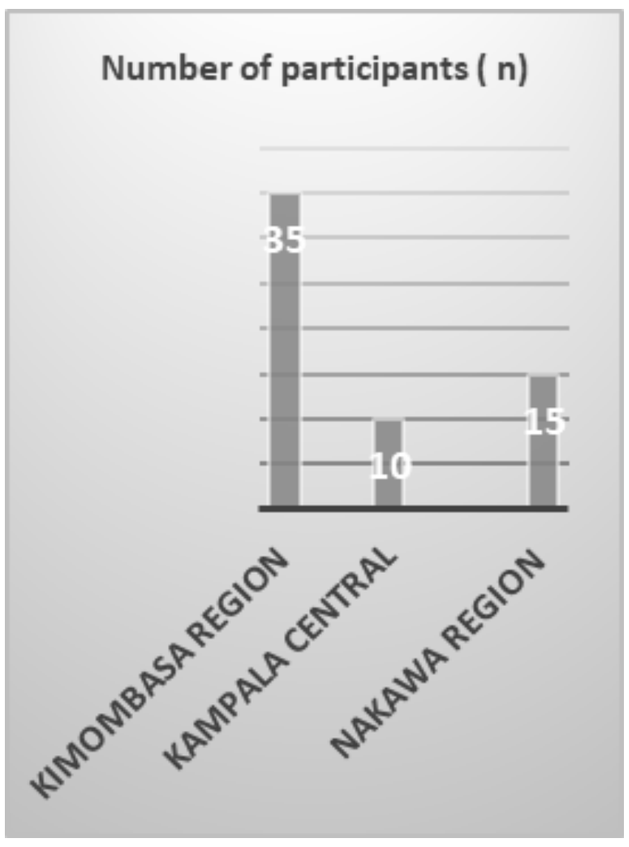

Figure 1. Number of participants, hospitals and their distribution represented in a form of site clusters.

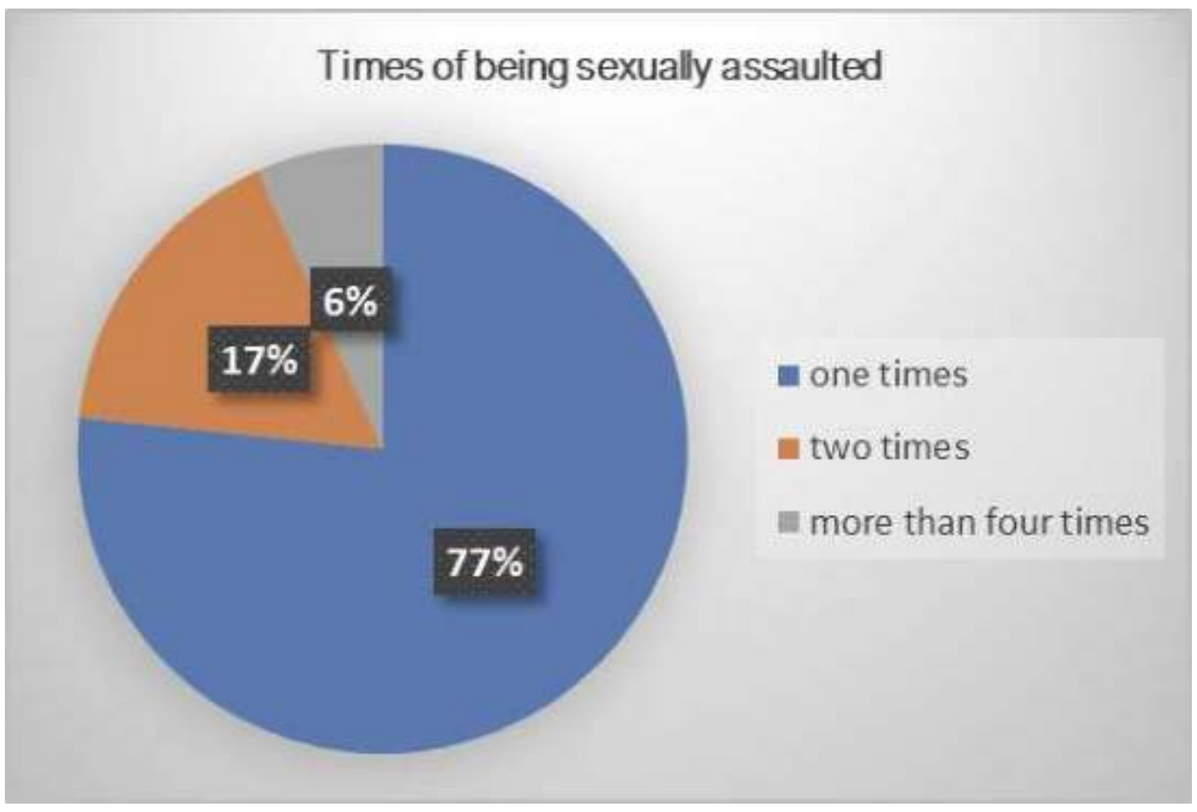

Figure 2. Display of how many times the participants who had experience of sexual assault were assaulted in their lifetime.

RESULTS

The participants who were included in the in-depth interviews were 60 (n=60). Out of 60 interviewed participants 60% of them had experience of sexual assault int their lives. Only 21.6% of participants had no experience of sexual assault in their lifetime. Out of 60% of participants who had a history of being sexually assaulted 66% of the participants were one time assaulted, 13.8% were sexually assaulted twice, 8.3% of participants were sexually assaulted 3 times and only 5.5% percent were assaulted more than 4 times.
The identified risk factors which made the participants more at risk of being sexually assaulted were the following: the fact that they have been working as sexual workers, less educated (most of the women finished only primary school), their poor economical status , being single or single parents as well on some occasion alcohol consume.
Also more than 80 % of women thought they are at higher risk to of being assaulted because they are women meaning weaker sexual actors and so being unable to protect themselves from violence.

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DELAYED AND IRREGULAR PRENATAL CARE *PREGNANCY OUTCOMES AMONG UNDOCUMENTED MIGRANTS IN GENEVA*

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Migrant Maternal Health

Migration is a global phenomenon that concerns not only people on the move, but also residents of the receiving countries. The health of migrants is determined by a varying and complex set of factors. Generally speaking, maternal outcomes in migrants are poorer than those of locals. Yet, in the canton of Geneva, Switzerland, maternal health and antenatal care outcomes have been proven to not be worse than those of the general population. The aim of this scoping review is to provide a social, anthropological and healthcare overview to justify differentiated patterns of health service utilization during the prenatal period and explain maternal health physiological outcomes among irregular migrant women resettled in Geneva.

Materials and Methods

Relevant literature was searched in PubMed, SCIELO and Web of Science between October 2018 and April 2019.
Papers were not restricted by the year of publication for social science and anthropological literature, while for medical papers, only those published since 2000 were assessed.
Quality was assessed by the number of participants and statistical significance of the results presented for medical literature and citation for social sciences.

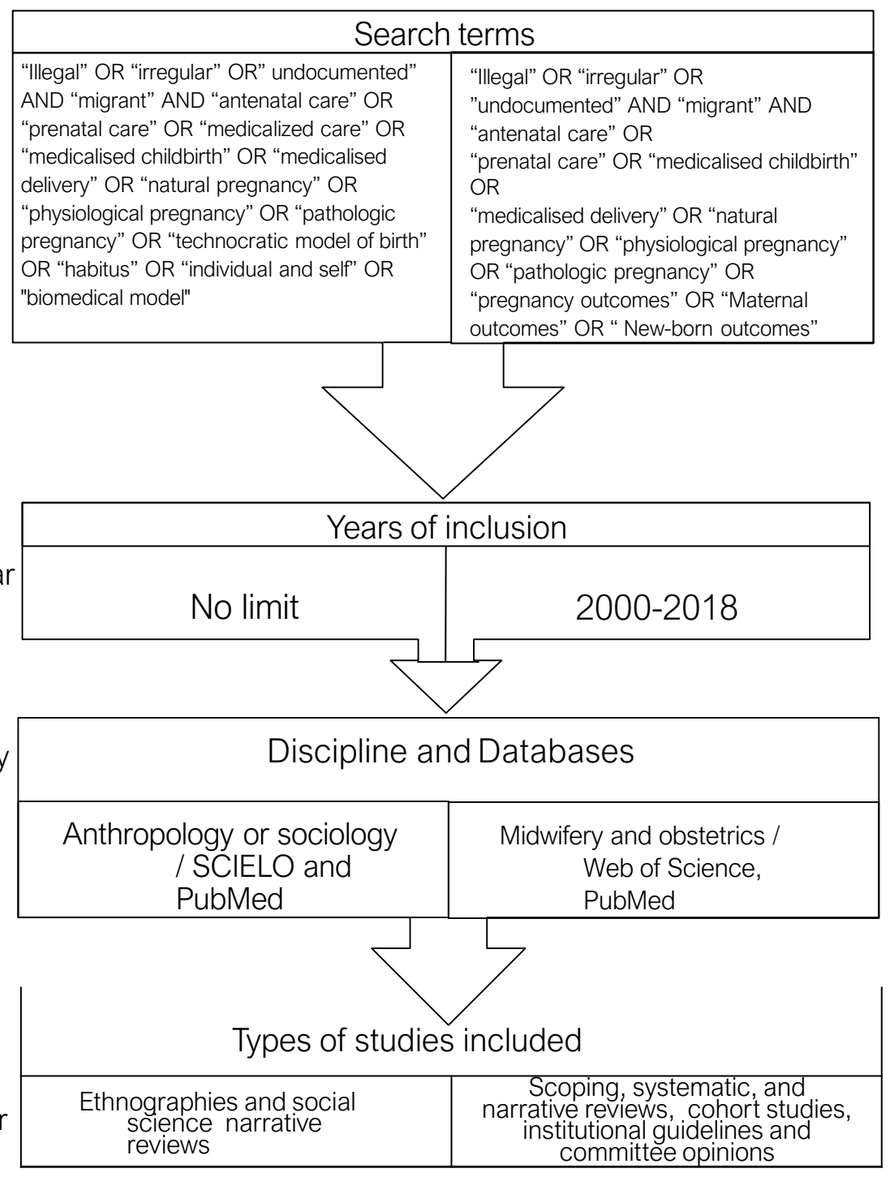

Figure 2. Methods.

Further quality assessment included the appraisal of the description of the methodology used to conduct the study.
Further data come from the author's role as a research assistant at a local healthcare ambulatory clinic dedicated to people without healthcare insurance and originate from semi-structured interviews with medical personnel, nurses, midwives and undocumented migrants.

Results

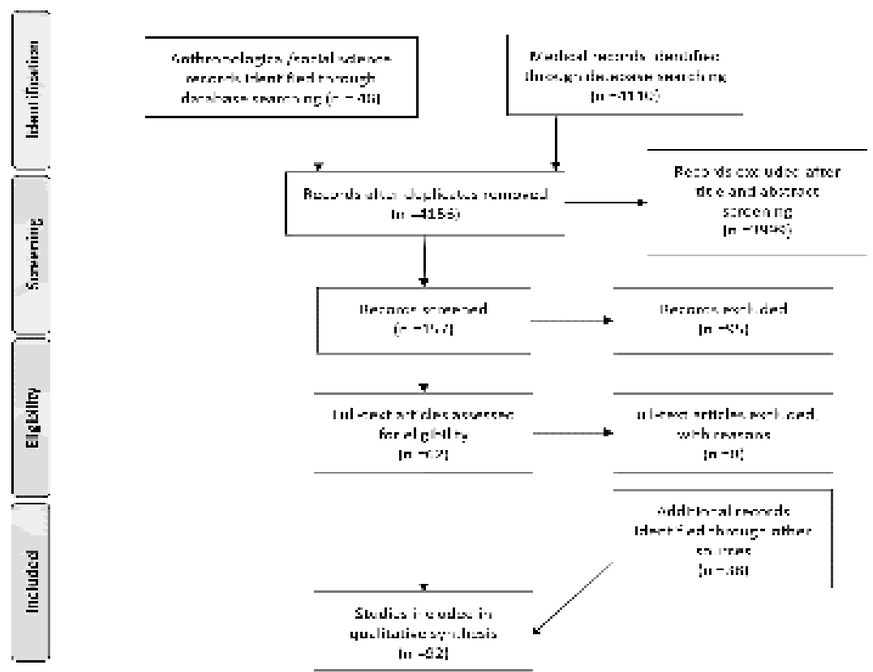

Figure 5. PRISMA Flow Chart.

The searches identified 4156 studies. After screening titles and abstracts, 157 studies were full text analyzed, out of which 70 met the inclusion criteria. Thirty-eight more studies were identified through bibliographic cross-referencing and added to the remaining 54. Ninety-two studies were finally included in the literature review.

Medicalizing pregnancy

Considering that:

- There is an overall trend in today's societies to consider pregnancy as a nonphysiological process.
- The biomedical representation of the pregnant body is deeply rooted in western societies.

However, this may not be the case for countries where migrant mothers might come from.
In an effort to understand migrant women's low antenatal care attendance in Geneva, the provision of healthcare might culturally differ from women's beliefs and practices.
In every society, new generations of parents are expected to follow a set of cultural practices that replicate basic values that are widely approved. While in Geneva—and in most western countries—this cultural model might be identified with the technocratic biomedical one, different cultural models might be embodied in other countries.

The paradox: access to healthcare and pregnancy outcomes

	Access to Heath care	Impact upon pregnancy outcomes
Geneva (Wolff et al. 2008)	Irregular	no
Canada (Khanlou et al, 2017)	Irregular	No when ethnic specific curves are used
USA (Galvez 2011)	Irregular (Mexican migrants)	No, described as the "birthweight paradox"

Figure 4. Worldwide migrant effect paradox.

Conversely, physiological pregnancy outcomes are not directly corresponding to more assiduous access to antenatal care

Locating the pregnant body: socio-economic and legal context

Socio-economic disparities during pregnancy by means of

- economic-related burden,
- feelings of undeserving or lack of entitlement to certain services,
- insufficient knowledge of dedicated and free of costs facilities,
- blaming/shaming related experiences in accessing healthcare structures

may reduce and worsen the situation.

While entitlement is provided to citizens by the law, in Geneva, access to free of cost antenatal care is assigned by the protocol-based human evaluation of affordability and psychosomatic evidence. To meet the expectations and respond to their needs, migrants are forced to set up a "performative expression of suffering" to present themselves as deserving of free medical attention (Huschke 2014).

"Access to pregnancy care: the cultural self and the pregnant body

Reproduction involves physical and behavioral changes. A person, by reproducing, never produces an exact copy of the self, but rather a new human being. In parallel to the socio-economic and medically described maternal and fetal physical changes, the attitude of the birthing women towards pregnancy and its management changes with time.

"Many valid models of childbearing and many solid practices of living the moment of pregnancy exists, but every such model is shaped by a combination of deeply held values and widely varying social, political and economic context"

(Gottlieb and DeLoache, 2016).

To properly describe this interior phenomenon, Smith-Oka et al. (2012) developed a new concept of "habitus". The "reproductive habitus" are the "modes of living the reproductive body, bodily practices, and the creation of new subjects through interactions between people and structures" (Smith-Oka, 2012: 2276). Personal and cultural behavioral approaches might be good substitutes of the biomedical schema in addressing minor pregnancy-related conditions.

Discussion

Standardized models of care, including antenatal care, are lifesaving and work exceptionally well when biological equivalents in medicine are needed. Yet, when it comes down to reproductive physiological care, current models need to be "personalized" or progressively adapted to the mother-infant's physical and biological wellbeing and to her social and cultural beliefs

Conclusion

Gaining a better understanding of the reality of migrants' mothers' health with a quality study could help society define the balance between excessive medicalization and complete lack of access to medical healthcare. In order to achieve this, a clearer insight of migrants' cultural practices could be extremely beneficial for integrating the current biomedical healthcare system in the light of World Health Organization Agenda 2030. This may advance local government commitment to understanding and recognizing migrants as a specific vulnerable group and illegality as a real health risk.

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THE COST OF VERBAL AUTOPSY DEVELOPMENT OF A COSTING AND BUDGETING TOOL

Authors

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Introduction

All countries need timely and complete national vital statistics, the cornerstone for population and socioeconomic policies. For the health sector in particular, reliable data on causes of is fundamental to decision making, health systems planning and resource allocation.

Verbal autopsy (VA) is an indirect method of estimating causes of death from information on signs, symptoms and circumstances preceding death. Although an imperfect tool, VA is still the best alternative in the absence of medical practitioners. There is growing interest on using VA as an integral part of countries mortality surveillance systems.
However, there is limited information on the costs of implementing such intervention.

Aim

To understand the resource implications and cost of implementing VA integrated in mortality systems, and to develop a tool to assist countries with their estimation. Surveillance.

Methods

The tool is based on Microsoft Excel® and uses standard costing methodology to produce estimates on the incremental cost of VA implementation as well as unit cost per population covered. The tool provides a stepwise process to define costing assumptions, to collect data and, finally, to produce the results of the analysis in different formats. Agilelementation. The tool also highlighted that VA is a human resource intensive activity with a high number of staff involved in the different VA activities but only using a small fraction of their time.

Conclusion

Countries will need to decide which interventions they will implement to get reliable, representative, and accurate cause of death statistics. In addition, donors face the challenge of being exposed to multiple funding priorities and pressure to show an impact on the investments made. The VA costing & budgeting tool could inform decision-making processes by providing an accurate and reliable estimate of the resources needed to implement VA.

Figure1. Front screen of the costing section of the Costing & Budgeting Tool.

Cost type	Country 1 (routine)		Country 2 (pilot phase)		Country 3 (pilot phase)		Country 4 (pilot phase)	
	Financial cost (2015, US$)	Economic cost (2015, US$)	Financial cost (2017, US$)	Economic cost (2017, US$)	Financial cost (2017, US$)	Economic cost (2017, US$)	Financial cost (2017, US$)	Economic cost (2017, US$)
Start up activities	137	884	35,927	13,863	38,390	7,717	9b,b9b	19,822
Governance activities	0	0	16,773	6,472	681	715	1,298	1,298
Refresher training and workshops	3,312	3,312	0	0	2,216	2,216	0	0
Program management	592	587	12,747	9,738	9,474	7,145	23,826	27,805
Supervision	2,368	2,368	0	0	1,163	1,163	28,703	28,483
Verbal autopsy delivery and analysis	31,903	31,403	5,539	2,678	12,437	4,081	5,298	9,056
Total	38,312	38,340	70,986	32,751	64,361	23,036	154,221	86,265

Figure 2 Summary of cost of VA implementation activity group in 4 countries (US$2015).

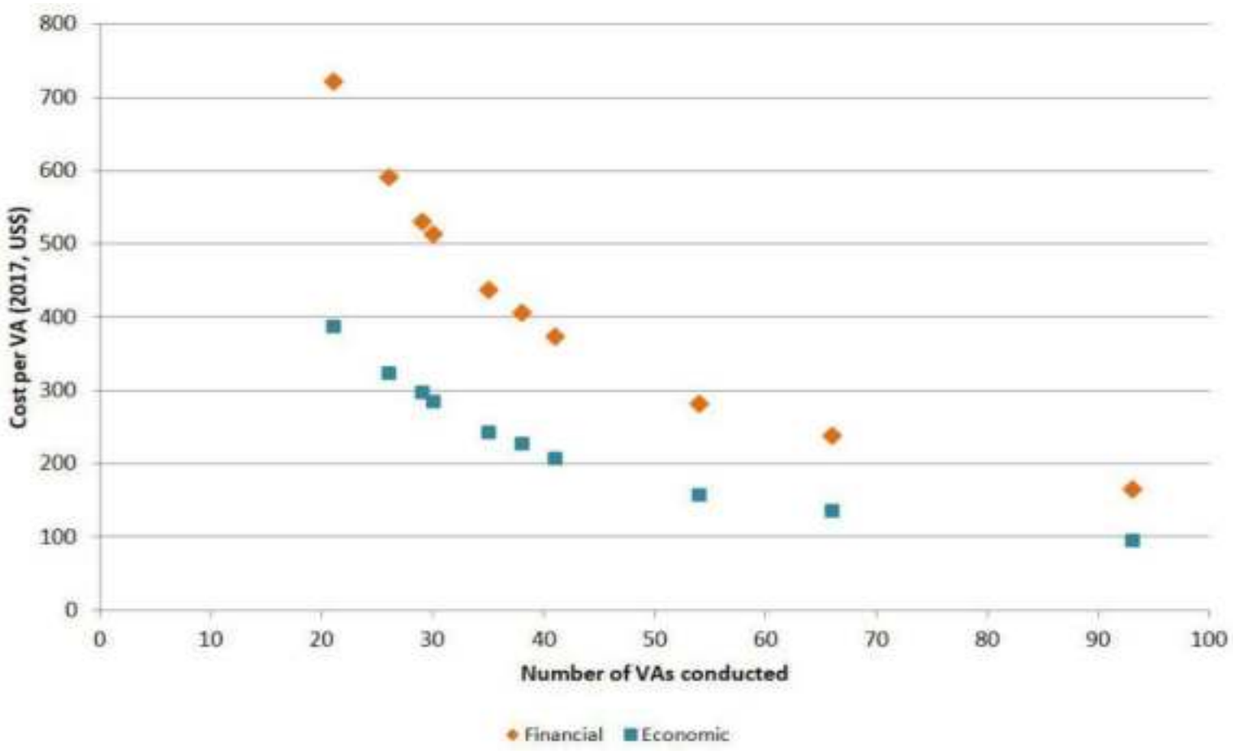

Figure 3 Relationship between the cost per VA in US$ 2017 and the total number of VAs conducted in each sub-national area.

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IMPROVING HEALTH OUTCOMES IN YOUNG PEOPLE INFECTED WITH HIV THROUGH MOBILE HEALTH INTERVENTIONS, IN A RURAL DISTRICT, IN UGANDA

A Qualitative Study

Authors

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Introduction

About 80% of youth infected with HIV live in sub-Saharan Africa[1]. 53,000 new HIV infections occurred among youth in 2018, accounting for 26% of HIV incidence in Uganda.[2]
Adherence to ART is the principal for achieving viral suppression[3].
In Uganda, youth are performing poorly in attaining viral suppression per 90:90:90 target.[4]
Involvement of end user prior to implementation of intervention yields effective user-friendly and acceptable interventions.[5,6]
Objectives: Assess barriers to adherence among youth infected with HIV in rural settings.
Assess acceptability of mHealth for HIV adherence support among youths prior to implementing mHealth intervention.

Methods

A qualitative study was conducted in mid-Western Uganda in June 2020, after research approval. Purposive selection was done for youth registered at ART clinic.
Data were collected through two focus group discussions and 3 in-depth interviews (initiated on ART for less than 3 months and established on ART for more than 3 months), with a predesigned guide with seven themes.
Audio recordings of interviews were transcribed and typed verbatim.
Data coding and analysis performed using NVivo 12.0 Themes and sub-themes were identified following the interview guide and transcripts. Quotes have been used to highlight the key findings in this study

Results

Purposive selection of 15 youths (16–24 years) infected with HIV, male and female, newly initiated ART (<3 months on ART) and those established on ART (>3 months on ART) consented/assented and participated in the study.
Two focus group discussions for youth 18–24 years experienced on ART; youth newly initiated on ART and three in-depth interviews for youth below 18 years (one newly initiated on ART, two were experienced on ART).

Table 1. Demographic characteristics of focus group interview participants.

Characteristics	Number (15)	(%)
ART Experience		
ART use below 3 months (newly initiated)	9	60%
ART use above 3 months (Experienced)	6	40%
Age group (years)		
16-19	3	20%
20-22	6	40%
23-24	6	40%
Gender		
Male	1	6.70%
Female	14	93%
Interview type		
Group discussion	12	80%
Indepth(individual) interview	3	20%

Barriers to ART adherence listed out by the Youths
• Lack of Food
• Forgetfulness
• Stigma from friends and fear to be identified as HIV infected on discovering you are on pills
• Noisy pill bottles- alert everyone around that you are on pills
• Pill burden with unending doses-makes one take drug holidays

Conclusion

Baseline findings suggest mHealth is acceptable and will conveniently reach out to the youth struggling with ART adherence, to optimise viral suppression thus improving health outcomes. Youths < 19 years expressed more need for support on ART adherence

Figure1. Focus group discussion with a group less experienced on ART (less than 3 months on ART).

Accepting mHealth Support for ART Adherence:

Challenges with ART adherence, missing drugs, or even taking drugs beyond stipulated time because of forgetfulness and busy work schedules has affected many youths. Pill reminder was seen as promoting adherence through real-time pill reminder for both AR- experienced and those newly initiated on ART.

> *"I accept because sometimes, like me, it is very easy to forget. So, sometimes I may be very busy and come back home when am very tired and sometimes I forget and I use only the alarm. Sometimes, I do not set the alarm and my timing will not be correct. So, it can remind me so that I do the right thing. FGD, Female, ART duration <3 months*

> *"For me, I forget easily, I sleep at 10:00 p.m. but sometimes I skip taking drugs (they laugh it off). Therefore, it is going to be very helpful because I oversleep. Even yesterday, it rained and I put my baby to sleep, but I also slept until morning (the rest laughed off). It is really going to help me so much." FGD, Female, ART experienced*

Reasons for mHealth use	Age 16–18 years	Age 19–24 years
Symptom reporting	9	0
Privacy	5	4
Pill reminder	11	7
Not forgetting	2	1
Help in adhering to swallow drugs well	1	2
Health Education Tips	6	3
Encouraging on positive living	3	2
Disease management	4	0
Clinic appointment reminder	4	2
Better planning and preparing Transport to pick drugs	1	4

Table 2. NVivo Matrix coding output for mHealth acceptability against youth age group

Remote Health Education Tips:

Health messages were seen as a motivation. Information will make them feel valued and not left alone, and advice will help them live a healthy life.

> *"We need it because it helps to educate you how to take your drugs well, they educate you more and you stay well." FGD,ART experienced*
> *"Yes, I would like to listen to the health tips" FGD, ART-naïve*

Participants selected days preferred to listen to health tips, and after mid-day was the best time for the majority.

Remote Symptom Reporting:

Participants argued that symptom reporting would enable sharing and report their challenges/health problems. Transport costs to and from health facilities will decrease in case of remote consultation.

> *"It will also help because previously I used to fall sick very often when I had just started those drugs; sometimes I would find I had to bus to Kiryandongo. When at work, I leave when already late, without having* time *to go the hospital. So, it will be of great help, depending on how I will be handling it." FGD, ART experienced*

> *"It will help me in discussing my problems." IDI- ART experienced youth*

> *"Because I stay in the village, sometimes it is hard to come, when the child is not well and mum is well, so it will help me." FGD, ART experienced*

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IMPACT OF WATER SALINITY ON MATERNAL AND NEONATAL HEALTH

An Assessment in South 24 Parganas District of West Bengal, India

Authors

Runa Nath and Kallol Mukherji

Tdh India Delegation

Introduction

Terre des hommes Foundation is currently implementing an integrated Health and WASH project in the coastal area Canning II block of South 24 Parganas district in West Bengal, India. Water salinity in the area is a significant challenge; and has serious implications on water quality for human needs. Canning II is a coastal area; and the objective of this study was to evaluate the potential impact of water salinity in the health of pregnant women and children in the area.

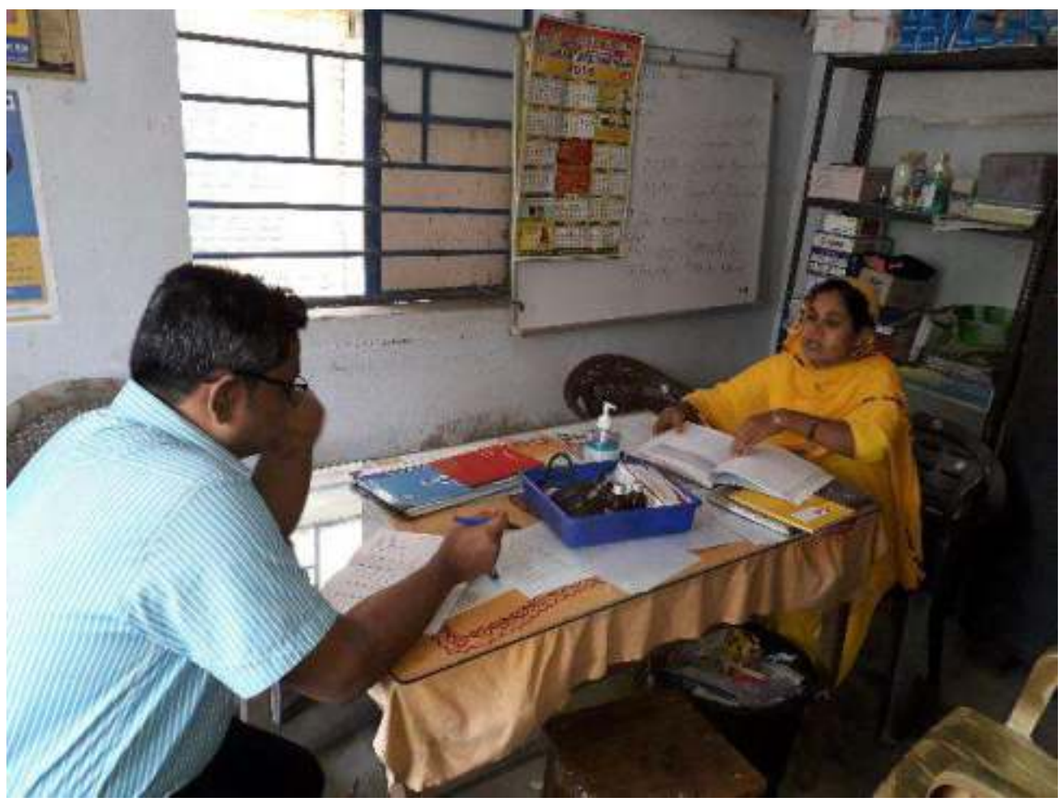

Figure 1. Interaction with a Nurse Midwife in a health facility.

Methods

Health Management Information System (HMIS) data from South 24 Parganas district in 2010 -2016 and government data from Canning II block of the same district in 2018-2019 were collected and analyzed to estimate the prevalence of diseases during pregnancy and at birth.

Figure 2. A Mother with her Low Birth Weight newborn.

Results

HMIS data show that more than 20% of the deaths among 6 years old and above; more than 30% of maternal deaths were due to hypertension related reasons; and more than 50% of neonatal deaths were due to low birth weight. Government data show that 10% of the pregnant women in Canning II are hypertensive and 16% of the children are born with low birth weight.

Literature review of several studies in Bangladesh revealed that

- Coastal people consuming drinking water with salinity ≥ 1000 mg/L has more than 17% chances of being hypertensive
- Women 31% higher chances of being hypertensive than men

South 24 Parganas District HMIS Data Analysis

	Neonatal Deaths	Deaths ≥6 years	Maternal Deaths
2010-2011	48%	21%	26%
2012-2013	37%	9.3%	31.3%
2013-2014	55%	11.8%	4.5%
2015-2016	40.6%	10.6%	6.9%

Figure 3. Data Analysis from 2010-2016.

Salinity of water sample from the area tested in the recent monsoon season was found to be 830 mg/L; but this salt concentration increases during the dry summer season.

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YOUNG CHILD FEEDING PRACTICES DURING CHILDHOOD ILLNESS

A Population Survey in Patharpratima Block of South 24 Parganas District of West Bengal, India

Authors

Runa Nath

Tdh India Delegation

Introduction

Terre des hommes Foundation has implemented a Health and Nutrition project from 2011 to 2018 in Patharpratima block of South 24 Parganas district of West Bengal in India. The primary objective of the project was to address acute malnutrition among U5 children. A community mobilisation approach was also designed and implemented to improve Infant and Young Child Feeding (IYCF) and treatment seeking practices during childhood illnesses.

Figure 2. A community level worker disseminating messages on Infant and Young Child Feeding (IYCF).

Methods

A population survey with questions to mothers and other child caregivers was conducted mid-2018. Information about recent illnesses among U5 children, and health seeking and IYCF practices during illnesses was collected and analyzed.

Results

Questions were responded by 1242 people in the surveyed population. Data analysis revealed that whereas feeding practices among U5 children improved significantly during usual times, more than 70% of the mothers have gone to rural health practitioners for treatment during child illness; and more than 80% of the children were fed less than usual during diarrhoea, fever and cough episodes. Changes on feeding practices during child illness were justified by 65.7% of participants as being part of the recommendations provided by rural practitioners.

Figure 1. Growth Monitoring session for U5 children.

Survey	2018	
n =	364	
Source of seeking advice about treatment of any of these illness	No. of Cases	%
Sub-centre	19	5.2
PHC/ SHC	30	8.2
Sub divisional/Divisional	3	0.8
ANM/ASHA	19	5.2
Private clinic, Nursing Home, Private Hospital	32	8.8
Traditional practitioner	3	0.8
Unqualified provider	239	65.7
Other	13	3.6
Faith Healer	2	0.5
CDC	4	1.1

Figure 3. Distribution of respondents by source of seeking advice about treatment of any of these illness survey 2018.

Figure 4. A community meeting using Participatory Learning and Action (PLA) Approach.

Survey	2018	
Feeding practices during fever		
Number of children suffered from fever (n=)	384	
How much the child was breastfed during fever	No. of cases	%
n=	289	
Child not breastfed	7	2.4
Less than usual	147	50.9
Same as usual	61	21.1
More than usual	74	25.6
How much the child was given to drink during fever		
n=	356	
Not given anything to drink	26	7.3
Less than usual	242	68
Same as usual	60	16.9
More than usual	28	7.9
How much the child was given to eat during fever		
n=	356	
Not given anything to eat	15	4.2
Less than usual	290	81.5
Same as usual	43	12.1
More than usual	8	2.2

Figure 5. Distribution of feeding practices during Fever.

Survey	2018	
Number of children suffered from cough (n=)	232	
Feeding practices during cough	No. of cases	%
n=	184	
Child not breastfed	6	3.2
Less than usual	147	54.4
Same as usual	61	28.3
More than usual	74	14.1
How much the child was given to drink during cough		
n=	189	
Not given anything to drink	12	6.3
Less than usual	142	75.1
Same as usual	25	13.2
More than usual	10	5.3
How much the child was given to eat during cough		
n=	189	
Not given anything to eat	5	2.6
Less than usual	153	80.9
Same as usual	30	15.9
More than usual	1	0.5

Figure 6. Distribution of feeding practices during Cough.

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FROM BIOMEDICAL IMAGE SEGMENTATION TO FLOOD MAPPING AT UNOSAT

Transfer Knowledge from Biomedical to Humanitarian Application

Authors

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Introduction

Flood Rapid response to natural hazards, such as floods, is essential to mitigate loss of life and the reduction of suffering. For emergency response teams, access to timely and accurate data is essential. Satellite imagery offers a rich source of information that can be analyzed to help determine regions affected by a disaster. Much remote sensing flood analysis is semi-automated, with time consuming manual components requiring hours to complete. In [3], we present a fully automated approach to the rapid flood mapping currently carried out by many non-governmental, national and international organizations. We design a Convolutional Neural Network (CNN) based method which isolates the flooded pixels in freely available Copernicus Sentinel-1 Synthetic Aperture Radar (SAR) imagery, requiring minimal pre-processing.

Neural Architectures

U-Net [1] was originally introduced for segmentation of neuronal structures in electron microscopic stacks. XNet [2] was developed as X-Ray Image Segmentation CNN. In [3], both architectures were used in the disaster response context for flood segmentation.

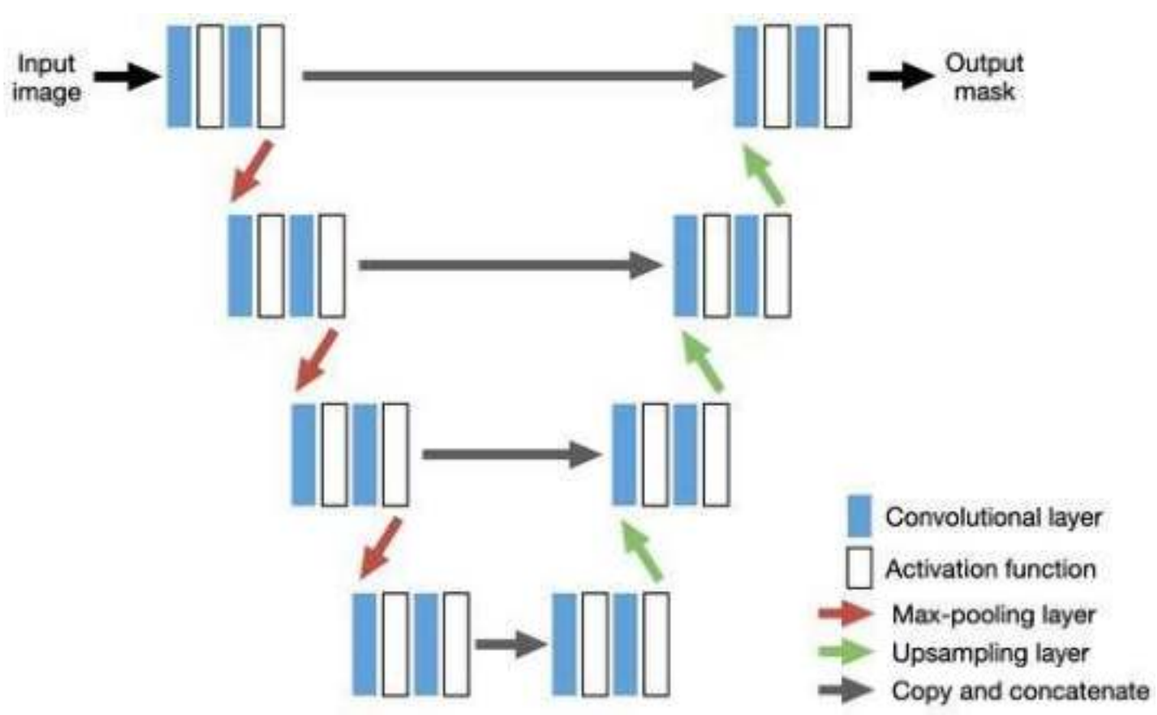

Figure 2. The U-Net [1] with input images of size 256x256 pixels producing a segmentation mask of the same size.

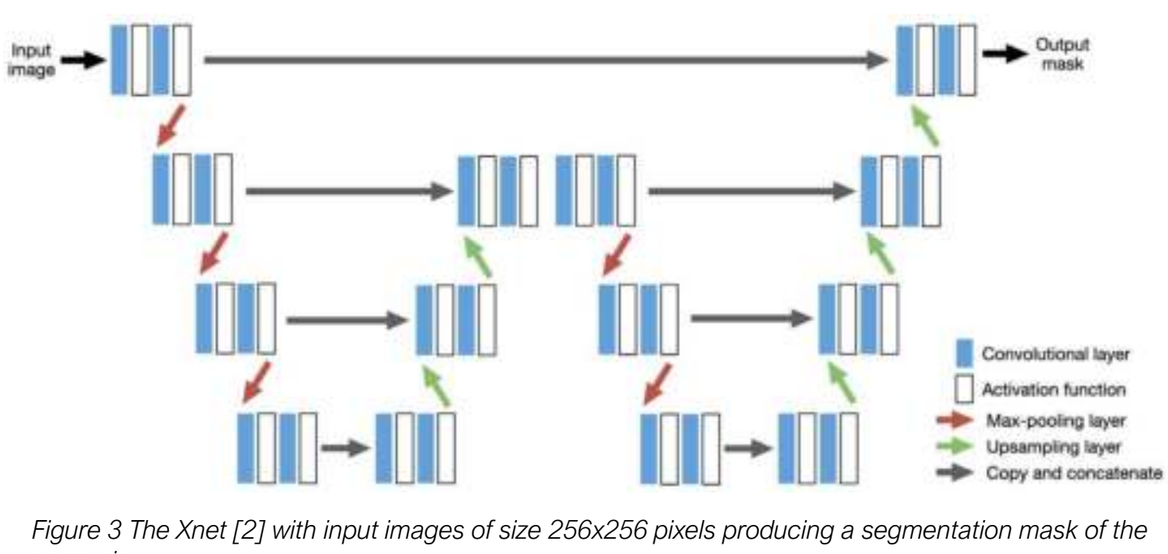

Figure 3 The Xnet [2] with input images of size 256x256 pixels producing a segmentation mask of the same size.

Conclusion

The ability to perform rapid mapping in disaster situations is essential to assisting national and local governments. UNOSAT, UN Global Pulse, and CERN transferred the knowledge from medical segmentation models to humanitarian application for flood segmentation in radar satellite imagery. By enabling flood mapping to be completed automatically in a fraction of the time, teams on the ground are able to respond more quickly to disaster situations. Given the outstanding results and the open-source data, this methodology can also be integrated into end-to-end pipelines for more timely and continuous flood monitoring.

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Methods

Dataset:

- 15 satellite imagery
- 3.7 billion pixels
- Highly imbalanced
- Artificially augmented and undersampled

Neural Architectures:

- U-net: Fully Convolutional Neural Network (CNN)
- Xnet: Built on a typical enconder-decoder CNN with addictional feature extraction stage with weight sharing across some layer
- U-Net using transfer learning with a ResNet backbone

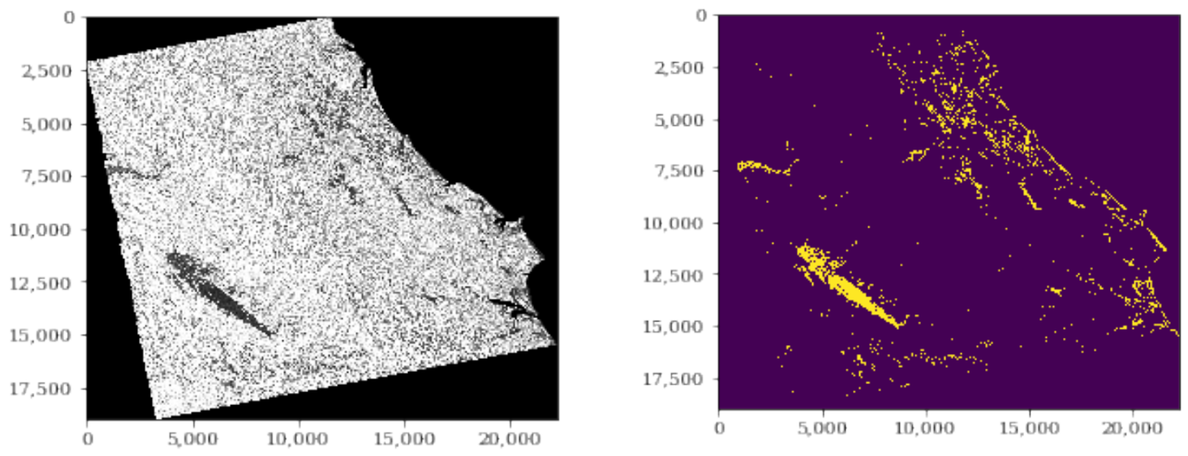

Figure 1. The analysis of Vietnam on the 6th September 2019 with the corresponding flood annotation. The left image displays the satellite imagery using the greyscale colormap. The image on the right shows the water label in yellow using the viridis colormap.

Results

The best output of the networks studied in [3] achieved an overall accuracy of 97% with precision of 91% and recall of 92%. This methodology also reduces the time required to develop a flood map by 80%, while achieving strong performance over a wide range of locations and environmental conditions.

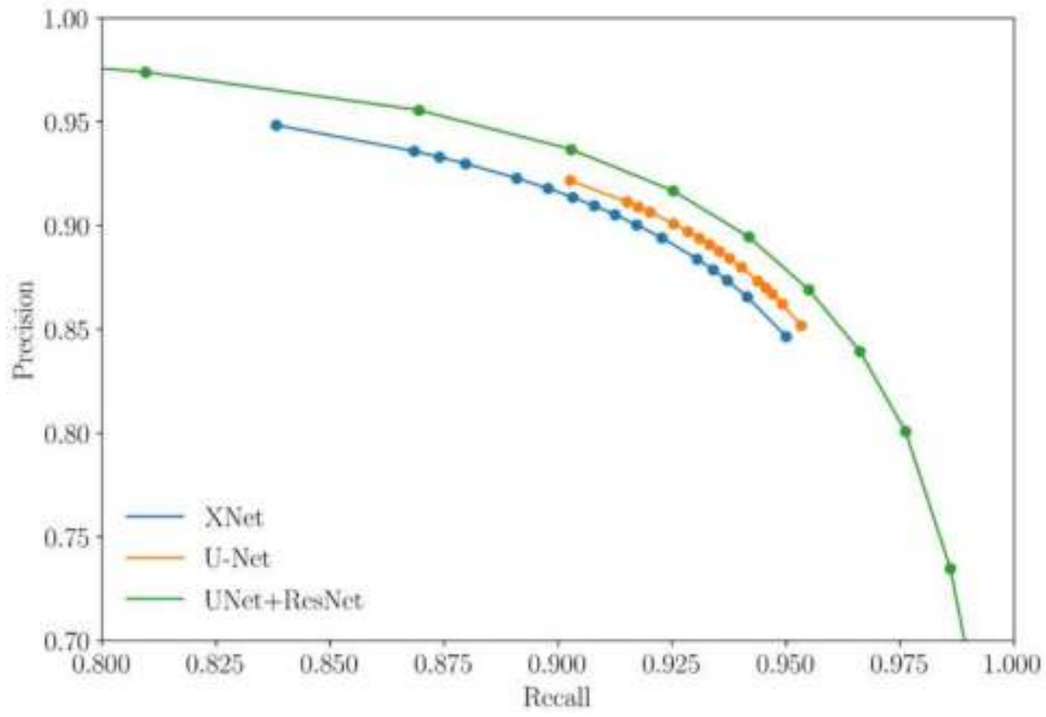

Figure 4. Precision-recall curves of the best XNet, U-Net and U-Net+ResNet models after hyper-parameter tuning.

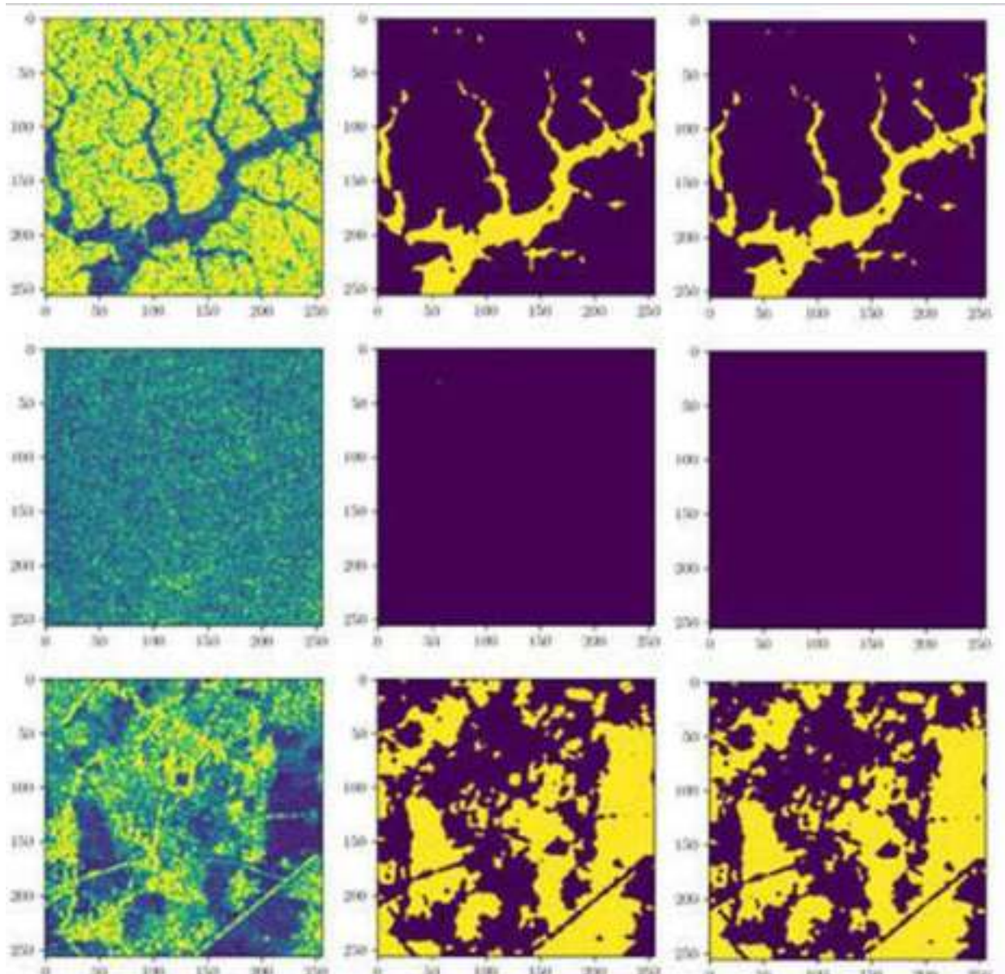

Figure 5. From left to right: raw SAR tiles displayed using the viridis colormap followed by tiles of the ground truth and neural network predictions. The background is displayed in purple and water in yellow.

[1] United Nations Institute of Training and Research Operational Satellite Application Programme (UNITAR-UNOSAT)
[2] UN Global Pulse
[3] CERN

IS THE 'HOST COMMUNITY' APPLICABLE TO ENTIRE DISTRICT POPULATIONS? A COMPARATIVE ASSESSMENT OF NUTRITIONAL STATUS AMONG UNDER-FIVES

Authors

Apio Benardate Okiria, John Isunju Bosco and Henry Wamani

Background

Uganda has one of the highest refugee per capita in the world.[1]
Nutrition indicators among under-fives assess and monitor general well-being of populations.[2,3]
Malnutrition is a public health concern in refugee hosting districts[4] which are rural with generally poor social services.
Refugee influxes strain local resources increasing vulnerabilities of surrounding communities. These districts receive support to strengthen social service sectors and build resilience. In practice, implementation is meagre[5].
Nevertheless, nearby communities may benefit more than communities away, therefore differences in general wellbeing including nutritional status among under-fives

Objectives

This study compared nutrition status and associated factors among children aged 6-59 months from the host community and non-host community of Isingiro district.

Methods

A comparative cross-sectional study of a quantitative methods approach was conducted in Isingiro district surrounding Nakivale refugee settlement.
A random sample of 556 children, 278 in either community were assessed for under-nutrition and their caretakers interviewed using a semi structured questionnaire.
Summary statistics, chi-squares and odds ratios were computed.

Figure.3. Map showing refugee settlement boundary and administrative units

Closing remarks

The host community's general well-being may be the most compromised. Access to social services including health and nutrition is key to protect against under nutrition. Address livelihoods to ensure food security
Streamline gender messaging to educate communities in sharing of household responsibilities

Communities closest to refugee settlements suffer the severest burden of under nutrition in Uganda's oldest refugee hosting district

	Severity by prevalence[6]	
	Host community	Non host community
Stunting	**Serious**	**Poor**
Underweight	**Poor**	Acceptable
Wasting	Acceptable	Acceptable

Classification of severity of malnutrition in either community by prevalence of stunting, wasting and underweight for children under 5 years of age

Males participating in household chores is protective against child under nutrition

Food secure households are protective against stunting

Children aged 18-29 months are likely to be stunted

Results

The mean z-scores of outcomes among study population;

- In host community were; **stunting** -1.35(±1.45)SD, **wasting** 0.00(±1.34) SD and **underweight** -0.72(±1.12)SD
- In the non-host community, **stunting** -0.86 (±1.63) SD, **wasting** 0.55 (±1.54) SD, **underweight** -0.06 (±1.11) SD

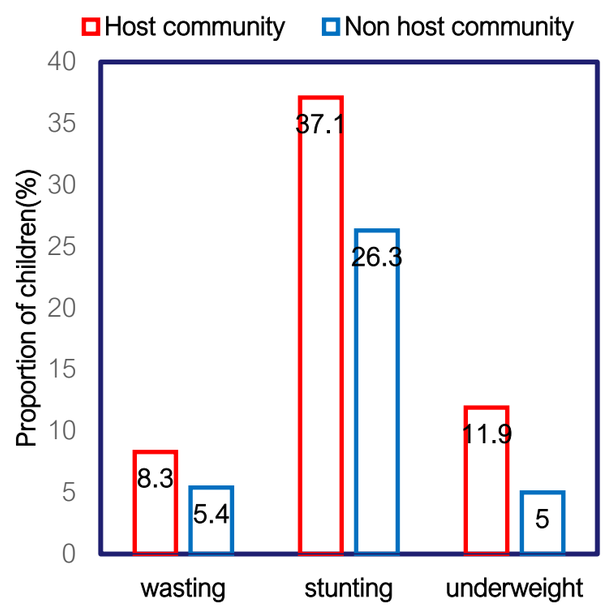

Figure 2: Prevalence of outcomes among children aged 6-59 months in the host and non-host community

Comparison of nutrition status
Stunting and underweight were statistically significantly different (χ^2=7.5, p-value 0.006; χ^2=8.4, p-value 0.004).

Factors associated to under nutrition

- In either community, older children were more likely to be stunted (18-29 months).
- In the non-host community, food secure households were protective against stunting (Adjusted PR: 0.59; CI: 0.35-0.98).
- In the host community, female children were less likely to be underweight (AOR: 0.33; CI: 0.4-0.76).
- In the non-host community, male help in house chores was associated to underweight (AOR: 0.23; CI: 0.08-0.71).

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Acknowledgements

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GENEVA TRENDS OF OVERWEIGHT AND OBESITY AMONG 5-6-YEAR-OLD SCHOOLCHILDREN FROM 2003 TO 2018

Authors

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Introduction

Overweight and obesity in children and the harmful health consequences of these conditions throughout the course of their lives is a growing, worldwide public health problem.

Excessive fat accumulation has been attributed to an imbalance between energy intake and expenditure, which has a multifactorial origin. Hereditary, environmental and socioeconomic factors play a role in the predisposition to and development of overweight and obesity.

Objective

The aim of the present study is to estimate the prevalence of overweight and obesity and their time trends among 5-to 6-year-old schoolchildren in Geneva over a 15-year period starting in 2003–2004, and to compare it with results from other areas of Switzerland.

Methods

A cross-sectional study at nine points in time, conducted in public schools from 2003–2004 to 2017–2018. During a systematic health check at school, data on the height and body weight of 5- to 6-year-old children attending public schools in the canton of Geneva were obtained. 12,918 girls and 13,395 boys were recruited for the study. Cole's references were used to classify the body mass index.

Data was obtained during a systematic health check at school, the children's weight and height measurements were carried out by the school nurses, BMI was calculated and compared to international norms and then was anonymously transferred to a database where depending on their weight status, each child was allocated to one of 3 groups: normal (including underweight), overweight and obese.

Results

	Survey year								
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2010–11	2013–14	2017–18
Entire group									
n	3726	3908	3718	3109	3533	2609	2900	2184	924
Normal*	86.1 (84.9–87.1)	85.5 (84.3–86.5)	87.3 (86.1–88.3)	87.4 (86.1–88.5)	87.3 (86.1–88.3)	85.7 (84.3–86.9)	88.0 (86.8–89.1)	87.2 (85.7–88.5)	85.4 (82.9–87.5)
Overweight	10.3 (9.3–11.3)	11.3 (10.3–12.3)	9.8 (8.8–10.8)	9.9 (8.8–11.0)	9.6 (8.6–10.6)	11.0 (9.8–12.2)	9.5 (8.4–10.6)	9.6 (8.4–10.9)	10.3 (8.5–12.4)
Obese	3.6 (3.0–4.2)	3.1 (2.6–3.6)	2.8 (2.3–3.3)	2.7 (2.1–3.3)	3.1 (2.5–3.7)	3.3 (2.6–4.0)	2.5 (1.9–3.0)	3.2 (2.5–4.0)	4.3 (3.1–5.9)
Overweight and obese	13.95 (12.8–15.0)	14.4 (13.3–15.5)	12.6 (11.5–13.7)	12.6 (11.4–13.8)	12.7 (11.6–13.8)	14.3 (13.0–15.7)	12.0 (10.8–13.3)	12.8 (11.4–14.2)	14.6 (12.4–17.0)
Girls									
n	1902	1927	1934	1175	1764	1423	1366	1158	470
Normal*	84.2 (82.4–85.8)	83.8 (82.0–85.3)	86.5 (84.9–87.9)	85.6 (83.4–87.4)	85.8 (84.0–87.3)	83.8 (81.8–85.6)	86.3 (84.3–88.0)	84.4 (82.2–86.3)	81.0 (77.2–84.2)
Overweight	12.0 (10.5–13.5)	12.9 (11.4–14.4)	10.6 (9.2–12.0)	11.3 (9.6–13.2)	10.9 (9.5–12.4)	12.6 (10.9–14.4)	11.2 (9.6–12.9)	12.4 (10.6–14.4)	14.5 (11.6–17.9)
Obese	3.8 (3.0–4.7)	3.3 (2.5–4.1)	2.9 (2.2–3.7)	3.1 (2.2–4.2)	3.3 (2.5–4.2)	3.6 (2.7–4.6)	2.5 (1.7–3.4)	3.2 (2.3–4.3)	4.6 (2.9–6.7)
Overweight and obese	15.8 (14.1–17.5)	16.2 (14.6–17.9)	13.5 (12.0–15.1)	14.4 (12.5–16.5)	14.2 (12.6–15.9)	16.2 (14.3–18.2)	13.7 (11.9–15.6)	15.6 (13.6–17.8)	19.0 (15.7–22.7)
Boys									
n	1926	1981	1884	1934	1769	1186	1235	1026	454
Normal*	87.9 (86.3–89.2)	87.2 (85.6–88.5)	89.1 (86.5–89.4)	89.1 (87.6–90.4)	89.8 (87.2–90.1)	87.7 (85.7–89.4)	89.7 (87.8–91.2)	90.1 (88.1–91.7)	88.9 (86.7–92.3)
Overweight	8.6 (7.4–9.9)	9.8 (8.5–11.1)	9.1 (7.9–10.4)	8.6 (7.4–9.9)	8.3 (7.1–9.6)	9.4 (7.8–11.1)	7.7 (6.3–9.3)	6.7 (5.3–8.3)	5.9 (4.0–8.4)
Obese	3.5 (2.7–4.4)	3.0 (2.3–3.9)	2.8 (2.1–3.6)	2.3 (1.7–3.0)	2.9 (2.2–3.7)	2.9 (2.0–4.0)	2.6 (1.9–3.6)	3.2 (2.2–4.4)	4.2 (2.7–6.4)
Overweight and obese	12.1 (10.7–13.6)	12.8 (11.4–14.3)	11.9 (10.5–13.4)	10.9 (9.5–12.3)	11.2 (9.9–12.7)	12.3 (10.8–14.2)	10.3 (9.7–12.1)	9.9 (8.2–11.8)	10.1 (7.6–13.2)

* including underweight

Table 1: Prevalence (95% confidence intervals) of overweight and obesity in Geneva children aged 5-6 years over nine school years between 2003–04 and 2017–18 using Cole's reference.

Discussion

A stabilization and, to some extent, a decrease in overweight and obesity rates seem to be continuing, which is consistent with results from other Swiss cities, as well as other countries worldwide.

We identified an important difference between girls and boys due to a statistically significant increase in the prevalence of overweight in girls from 2010–11 onwards, and a continuous decline in the prevalence of overweight in boys from the same age group.

This study also shows a non-significant increase in the general prevalence of obesity during the same period.

There has been a relatively marked and significant increase in obesity for both boys and girls since 2010–11.

We observed a relative increase in the percentage of obese children compared to all overweight children, which is a more recent phenomenon.

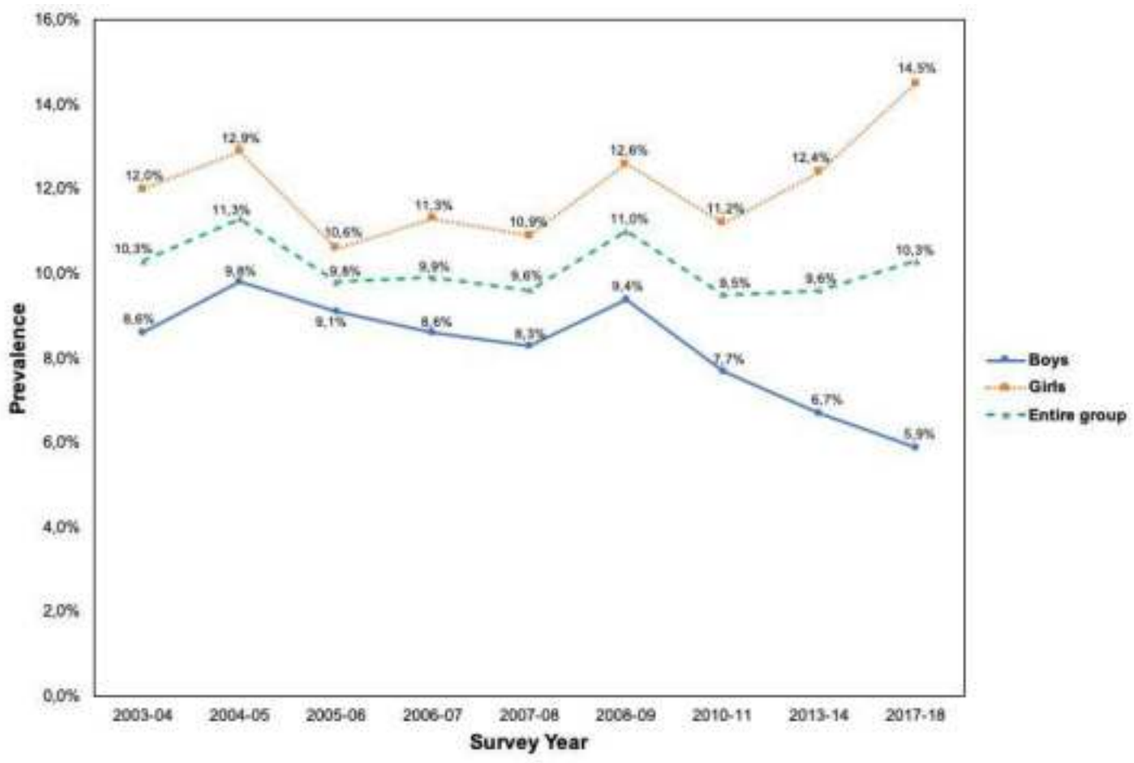

Figure 1. Trends in the prevalence of overweight among Geneva children aged 5–6 years between 2003–04 and 2017–18 by gender

The prevalence of overweight children has remained stable at around 10.3% since 2003–04; it has increased slightly (0.7 points) since 2013–14, but this increase is not significant.

There is an increase of 2.5 points (p = 0.14) in the prevalence of overweight among girls since the 2003–04 school year. The increase has not been steady, but the increase since 2010–11 is statistically significant (an increase of 3.3 points).

Among boys, after an initial decline followed by an increase, overweight has now decreased by 2.7 points (p = 0.06) since 2003–04. However, only the decrease since 2008–09 is significant (3.5 points, p = 0.0287).

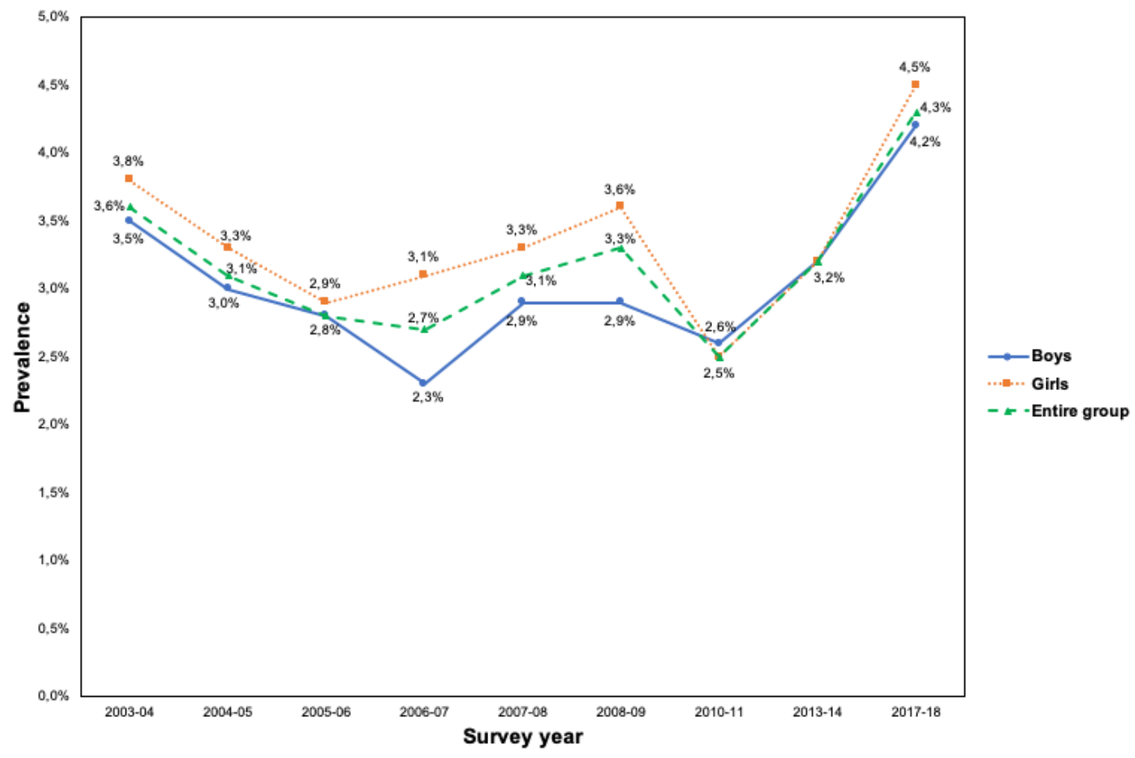

Figure 2. Trends in the prevalence of obesity among Geneva children aged 5–6 years between 2003–04 and 2017–18 by gender.

The prevalence of obesity has increased by 0.7 points since 2003–04, but this increase is not statistically significant.

A relatively marked and statistically significant increase in the prevalence of obesity (1.9 points, p = 0.0130) since 2010 was observed for both sexes in this age group.

For girls, the prevalence of obesity has shown a non-significant increase (0.7 points) since 2003–04, but this rise has become more important since 2010–11, with an increase of 2.0 points.

The prevalence of obesity among boys has increased by 0.7 points since 2003–04. However, the prevalence changed from 2.6% in 2010–11 to 4.2% in 2017–18, an increase of 1.6 points.

A further decrease in overweight and obesity becomes an objective, more aggressive approaches might be necessary

- Improving healthy lifestyle education
- Promote daily physical activity in a school with a structured physical activity program implemented by specialized and trained staff
- develop healthy eating habits: increase the intake of fruit and vegetables, and discouraging sugar-sweetened drinks

Conclusion

The best way to further reduce the problem is to continue monitoring BMI and to implement proven prevention strategies that influence energy intake and expenditure.

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DEMOCRATISING PROSTHETIC AND DIABETIC CARE

A Resilient Model for Healthcare Delivery

Authors

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Abstract

We are developing a healthcare delivery model for people with diabetes and limb loss in medically underserved communities to offer convenient, high quality care for a fraction of the cost.

Satellite mobile health clinics increase the capacity and geographical range of medical services, and are operated by local clinicians, allowing the community to support its own members. We reduce the burden of treatment while sharing the cost of technology and high quality services across a larger community. Onboard, patients with amputations can obtain prosthetic care, and treatment for diabetes prevents future cases of amputation and other complications of unmanaged diabetes. An epidemiological heat map strategically guides our intervention to where services and resources are most needed to address health disparities.

Health outcomes, economic evidence and our impact on health access will support the sustainability and scalability of this model to additional locations.

The Challenge

Of the 900,000 amputees in Mexico, more than 85% were due to a lack of diabetic care, tracking, and management. Diabetic amputations have been ranked as the most preventable surgery. For diabetic patients who consistently struggle to control their blood glucose, the risk of amputation skyrockets by up to 30 times. Because health access is so influential on diabetic management, regular haemoglobin A1c testing has been associated with a 39% decrease in amputation risk.

With regard to both diabetic and post-amputation care, patients continually experience difficulties in reaching clinics, obtaining proper equipment, and maintaining their limbs. While the number of amputees and diabetic patients grows exponentially, the infrastructure that provides their medical services remains stagnant. Only 3% of the 900,000 amputees in Mexico have a functional prosthesis, and there are less than 50 prosthetic clinics in Mexico.

Figure 1. A homemade prosthesis made by a patient without access to proper care (photo taken in Nogales, Mexico).

Health Outcomes

The medical results of more convenient, frequent and accessible healthcare can be measured in a number of ways, including clinical outcomes, impact on health access, and economic impact.

Since 2005, the cost of diabetic complications in Mexico has increased more than 500%.

We aspire to lower the rate of amputations and gather evidence of better diabetic management, thereby lowering this economic cost.

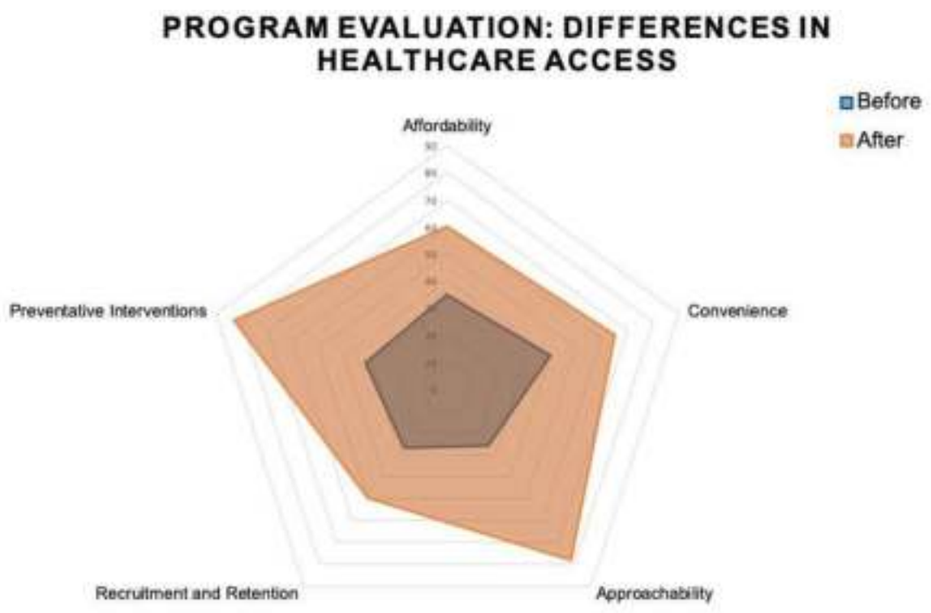

Figure 2. One method of measuring our influence on components of health access.

The Mobile Clinic Design

An innovative design is proposed for the Mobile Clinic, with foldable side panels that allow the interior area to triple when stationary, thus also becoming fully accessible for patients on wheelchairs. In this way, the inconvenience for the patients is reduced as well as the need for staff for assisting wheelchairs transfers.

As visible in Figure 3, there would be three main areas:

- a Prosthetic Services Area (in red), equipped to analyse the patients' residual limbs for prosthesis design, and also used for adjustments to prosthetic sockets
- a Patient Intake Area (in blue), with a waiting area for the patients and accessible through two doorways, one for wheelchair users and one staircase
- a Diabetic Service Area (in yellow), equipped with diabetes monitoring and management devices, in particular check ups for diabetic foot to prevent amputations

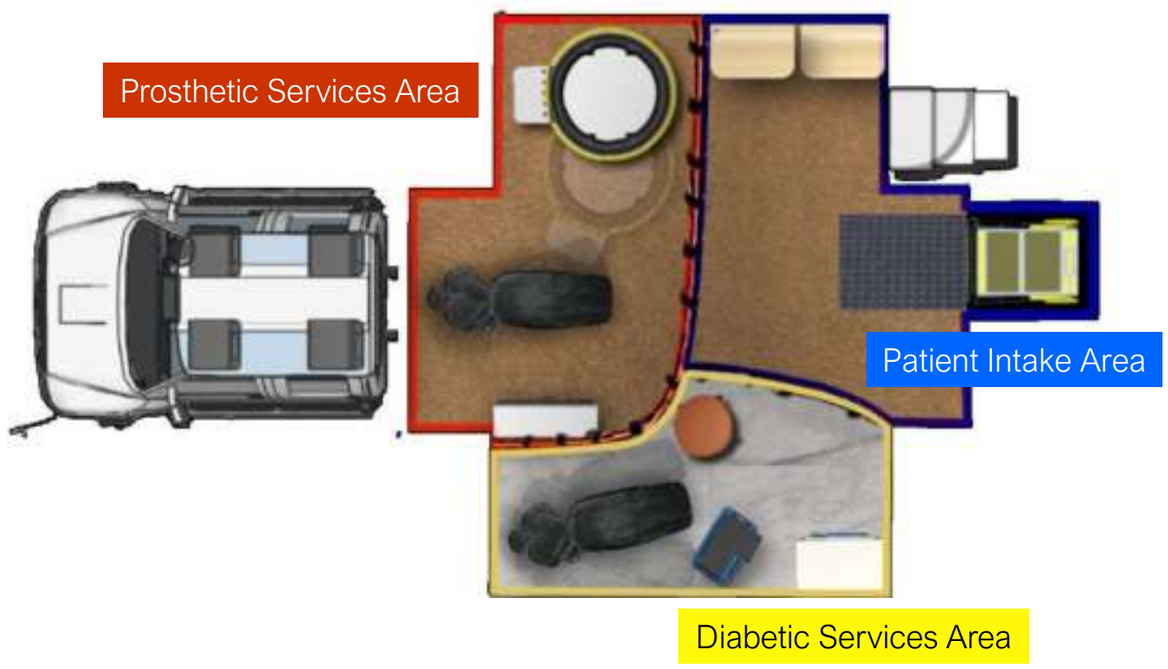

Figure 3. Floor plan of clinic with side panels fully extended for operation.

Health Disparities Heat Map

A fundamental aspect of the project is the development of a data-driven system for aggregating information and building an agile and impactful method of delivering healthcare. A mapping tool is in development to collect available data from open repositories, and analysing them with algorithms for specific markers and indicators.

Extensive evidence shows that social determinants of health contribute to higher rates of the disease in specific geographical areas. Specifically, unmanaged diabetes and amputation cases demonstrate geospatial clustering. By knowing these factors, one can predict which areas would be mostly affected, even when direct prevalence rate data are not available.

Moreover, by training the model in well-known data-rich areas (like some states in the US), the same approach could be applied in data deserts.00

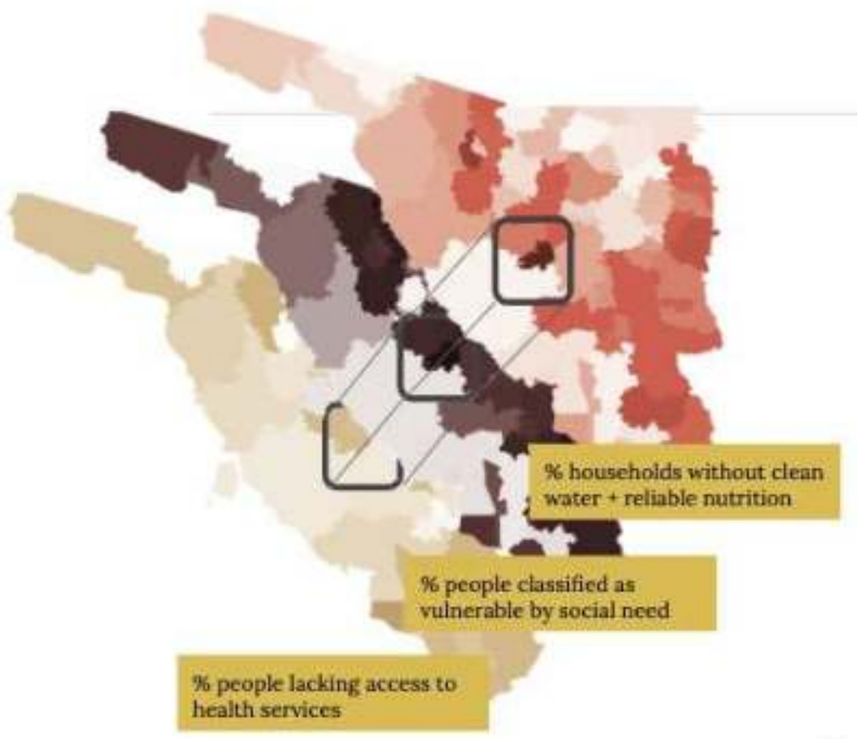

Figure 4. A few of the data layers incorporated into our algorithm for identifying locations in need of expanded services.

Closing remarks

This project started from the passion and commitment of the authors and their colleagues for democratising access to healthcare in underserved areas. Every further support, advise, partnership is welcome, please refer to the below website.

For more information, or to get in contact, refer to our website: https://www.media.mit.edu/projects/resilient-prosthetic-and-diabetic-care/overview/

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INEQUALITY IN UTILIZATION OF HEALTHCARE SERVICES AMONG ADOLESCENT GIRLS IN URBAN SLUMS

Findings From a Study in Slums of Jaipur City

Authors

Rajnish Ranjan Prasad

Introduction

a. In India, evidence shows that there is inequity in the utilization of health services by adolescent girls.

b. However, adolescent girls are not a homogeneous group, and depending on socioeconomic and demographic factors, some girls are more disadvantaged in the utilization of health services than others.

c. Hence, this study was undertaken to understand inequality in utilization of health services among adolescent girls.

Methodology

a. The study was done using mixed methods in the urban slums of Jaipur (capital city of Rajasthan, India).

b. The sample size for the study with a 95% confidence level, 5% error margin, and 10% non- response rate was 295 adolescent girls.

c. A total of 281 girls responded to the interview, and 3 FGDs (10 girls in each FGD) were conducted with the adolescent girls to collect in-depth qualitative information.

Findings

Health Issues	Frequency	Percent
Type of treatment		
No treatment taken	108	38.4
Home remedies or medicine from pharmacy	39	13.8
Visited health facility	134	47.7
Total	281	100.0
Type of Health facility visited		
Government	59	44
Private	75	56
Total	134	100.0
Reason for selecting a particular facility for treatment		
Convenience (distance, timing)	57	42.5
Quality of service	46	34.3
Female service provider	31	23.1
Total	134	100.00
When the respondents visited health facility after the onset of symptoms		
Same day	3	2.2
1–2 days	41	30.6
3–5 days	71	53
6–10 days	19	14.2
Total	134	100.0
Felt comfortable in sharing the problem with service provider		
Yes	58	43.3
No	76	56.7
Total	134	100.0

Figure 1. Type of treatment availed.

Variables	Odds Ratio	95% Confidence Interval	
		Lower	Upper
Father's income (Rs 7500 or less / Rs 7501 or more)	2.282	1.373	3.795
Mother's income (Rs 7500 or less / Rs 7501 or more)	5.451	2.664	11.152
Counselled by ASHA/ ANM (No / Yes)	7.926	4.601	13.653
Category (SC&ST / OBC & General)	1.695	1.054	2.728
Girl's education (5th class or less / 6th class or more)	15.529	3.622	66.588
Father's education (5th class or less / 6th class or more)	2.392	1.257	4.552
Mother's education (5th class or less / 6th class or more)	8.093	4.747	13.798
Health problems (General health problem / Reproductive health problem)	1.951	1.213	3.137

Figure 3. Strength of Association-Odds ratio.

Variables	Health Service Utilization	
	X^2	p-value
Father's employment	28.881	.000
Father's income	11.082	.011
Mother's income	28.102	.000
Mother's employment	23.390	.000
Counselled by health worker	61.422	.000
Category of the respondent	4.819	.090
Girl's education	30.469	.000
Father's education	7.896	.019
Mother's education	65.313	.000
Health Problem	7.721	.021

Figure 2. Association among different variables and health service utilization.

Results

a. Girls whose father's income was less than Rs 7500 pm were 2.3 Times more likely to opt for home-based treatment, while girls whose mother's income was less than Rs 7500 pm were 5.45 times more likely to opt for home-based treatment. Girls from indigenous communities were 1.7 times likely to go for home-based treatment.

b. Girls who had never been counselled by field staff were 8 times more likely to opt for home-based treatment.

c. Girls with education up to 5th class or less were 15.5 times more likely to opt for home-based treatment. Girls whose father had education until 5th class or less were 2.4 times likely to opt for home-based treatment, and girls whose mother had education until 5th class or less were 8.1 times likely to opt for home-based treatment in comparison to girls whose mother had an education until 6th class or more.

Conclusion

a. The findings from the study highlight significant inequities among adolescent girls in urban slums, depending on their socioeconomic and demographic background.

b. There is a need to pay increased attention to addressing the health needs of girls with less education, poorer economic background, and from indigenous communities.

c. Outreach by frontline staff can significantly improve the utilization of health services.

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LAUNCHING EHEALTH TO IMPROVE UHC IN UKRAINE AS A PART OF 2017–2019 HEALTH FINANCING REFORM

A Case Study

Authors

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and Dmytro Chernysh

Background

Since gaining independence in 1991, Ukraine has not succeeded in reforming its healthcare system for decades. Ukraine's health financing reform was launched in Fall 2017 through a Law that aimed to protect citizens from catastrophic expenditures and introduce the concept of universal health coverage (UHC) by establishing national strategic purchaser, health benefit package, and new payment mechanisms. The principal decision of the Government was that every stage of reform be equipped with essential eHealth functionalities to ensure transparent, reliable, and timely data.

At the beginning, the reform initiated the changes at the primary healthcare (PHC) level that had been neglected in the country for many years. In 2018, new regulations and payment mechanisms were introduced for PHC providers through the national strategic purchaser National Health Service Ukraine (NHSU). One year later, the governmental program for the reimbursement of medicines for the most common NCDs was transferred to NHSU, and new payment mechanisms for the hospitals were piloted in one of the regions.

Within health financing reform, the Government has selected a hybrid model of eHealth when the State is responsible for the central component and data base (standards, architecture, security, and interoperability), whereas IT businesses provide competitive solutions for users.

Study design

The objective of the study is to understand the potential of eHealth launch for UHC enhancement in Ukraine.

This study is based on a case study methodology that includes participatory observation, review of documents, and analysis of publicly available data. Participatory observation includes practical field work in the health financing reform team at the Ministry of Health and National Health Service of Ukraine. The document review comprises legislation and related normative and methodological publications. Public data are mainly accessible through the website of National Health Service Ukraine, www.nszu.gov.ua.

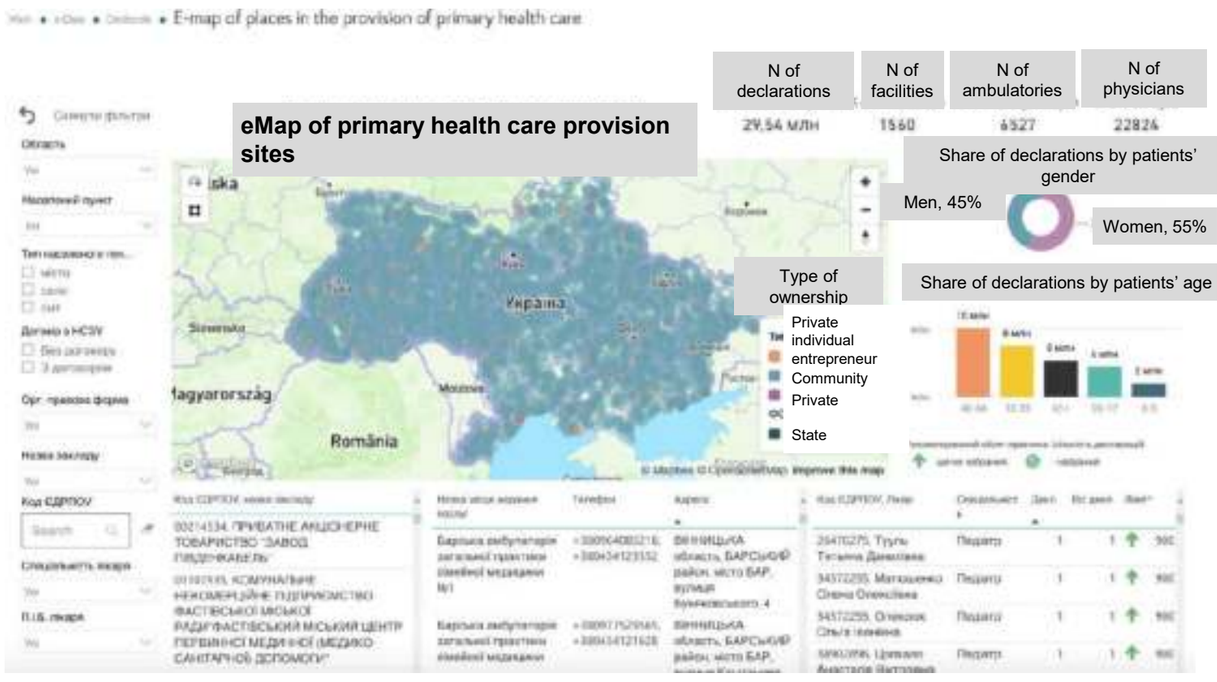

Figure 1. Example of the dashboard available at the NHSU web-site: mapping PHC providers.

Implementation process

Essential eHealth functionalities were introduced one by one according to the reform stages for the whole country at once.

For PHC, eHealth has provided the following functionalities:

- Patient–doctor e-declarations—so patients can realize their right for a free choice of family doctor;
- All the contracting procedures among NHSU and PHC providers, so patients can easily know which providers are available;
- All the contracting procedures among NHSU and the pharmacies, so patients easily know where they can receive their medicine;
- e-prescription for the governmental reimbursement program called "Affordable medicines" (for the most common NCDs), so patients can receive their medicine in any contracted pharmacy and get recurrent prescription by phone.

The introduction of all these functionalities—patient–doctor declarations, contracting of PHC facilities and pharmacies, e-prescription—took half a year in total. All the developments were done according to international standards as well as HL7 FHIR medical data requirements. Each functionality was developed in two steps—at the central data base and afterwards with the help of IT businesses for the ultimate users.

Contrary to usual practice, but considering the country context, the patient health records at PHC level were launched after e-prescription, in September 2019.

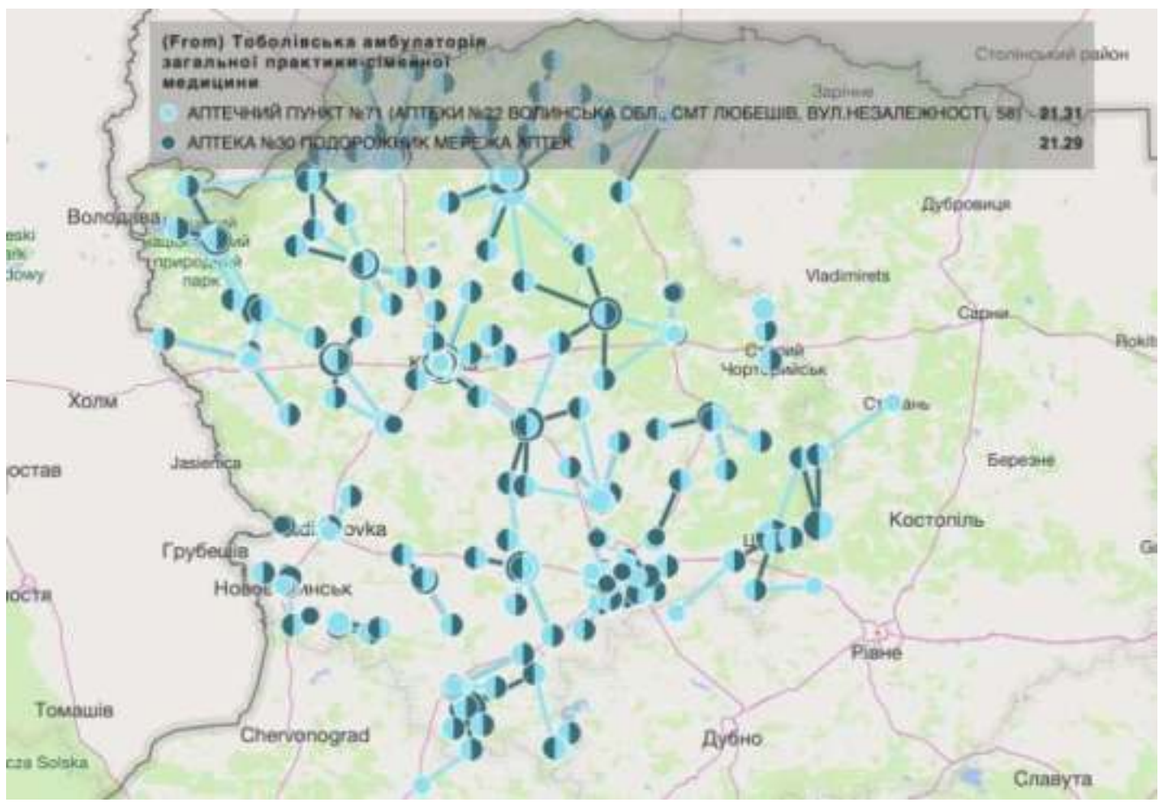

Figure 2. Distance correlation among PHC providers and the nearest pharmacies contracted, Volyn region (6.95 km is the mean of distance, 5.11 km is the median of the distance).

Implementation results

The implementation of eHealth functionalities has contributed to the UHC in Ukraine in the following ways:

- By signing the e-declaration, patients announce their right for a free choice of PHC doctor. As of Sept 2019, 28 mln of Ukrainians have signed the declaration, which is about 70% of the population. E-declaration is an entrance point to the health system, except for emergencycare.
- The introduction of e-prescriptions has reduced geographical, financial, and time barriers for patients, so we can observe a daily enrollment of new patients. The data based on which we operate can be seen below.
- Patients have better access to actual data on the geographical network of PHC facilities, the workload of every doctor, and all the payments done by NHSU—through the NHSU website and contact center—so they can make an informed decision.
- Additionally, via the NHSU website, patients know all the contracted pharmacies, as well as the distance between PHC providers and pharmacy.

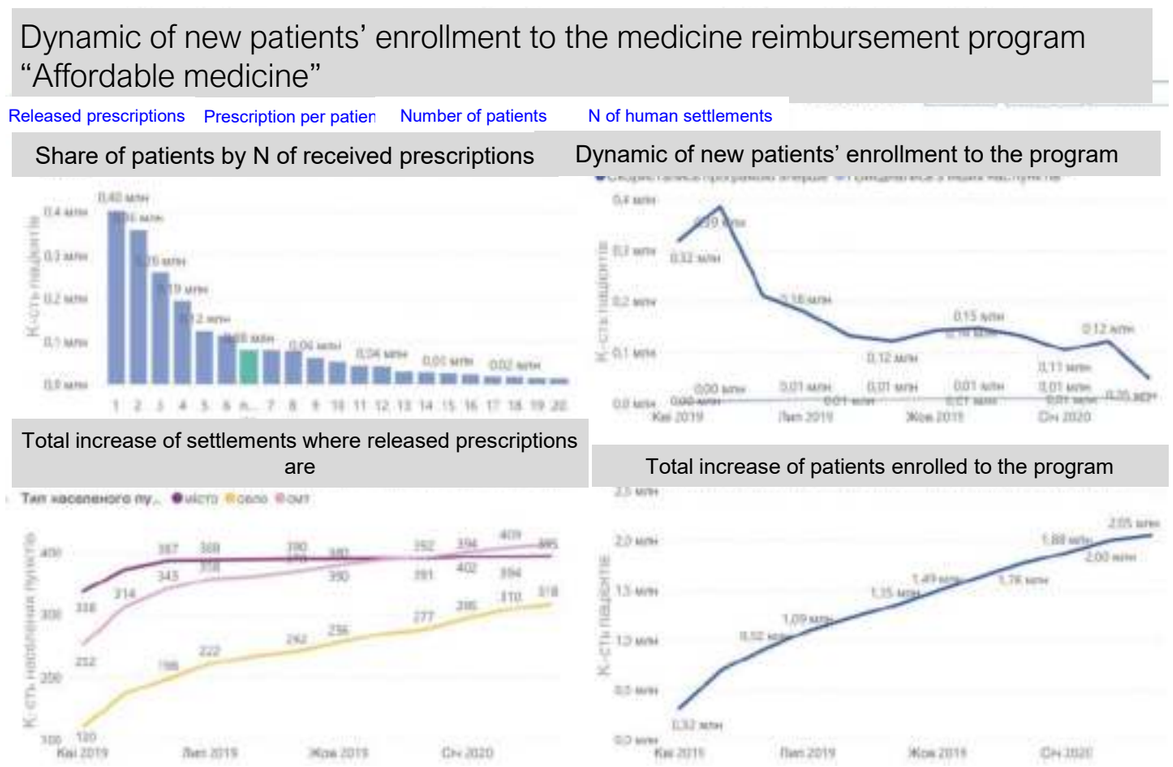

Figure 3. Dynamic of enrolment of new patients to reimbursement program.

Conclusions

Whereas introduction of eHealth is always a challenging task, the hybrid model has allowed to mitigate number of related risks and introduce each essential functionality for a whole country at once. In practical terms, such «eHealth coverage» has contributed to the UHC as it reduces the barriers for the patients and stimulates the development of PHC.

In parallel, eHealth enhances the transparency of data both for the citizens and for the policy makers, giving reliable, timely, and structured data. It also allows operating big data, so NHSU could see the gaps in service provision and react.

The next reform stage takes place in April 2020, when all other types of healthcare will move to new financing model. This stage is also accompanied with eHealth functionalities, including the patient health records, referrals, contracting and reporting.

In Ukraine, eHealth has directly contributed to UHC by helping to reduce the barriers for the patients and enhance the role of PHC in the country.

Acknowledgement

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MEDICAL EDUCATION DEVELOPMENT

GRIPPENET: A NEW TOOL FOR THE MONITORING, RISK-FACTOR AND VACCINATION COVERAGE ANALYSIS OF INFLUENZA-LIKE ILLNESS IN SWITZERLAND

Authors

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Background

Key points on Influenza
- Affects an estimated one billion people every year around the world
- Every year in Switzerland, influenza is responsible for several thousands of hospitalizations and hundreds of deaths
- National influenza surveillance by Sentinella, a national Sentinel network of 150 to 250 physicians

Grippenet.ch
- Participatory online platform for influenza surveillance
- Part of Influenzanet, a 10-country European consortium
- Implemented in Switzerland in 2016

Objective to evaluate Grippenet's performance between 2016 and 2019 in monitoring influenza-like illnesses (ILI) in Switzerland, identify risk factors associated with contracting an ILI and investigate medical-care seeking behaviors

Methods

Participant Recruitment
- Through local and national media, communication campaigns
- Inclusion criteria: residency within Swiss territory
- Registration of family members possible (e.g. children, elderly)
- Registration at any time of the year

Data collection
- Intake questionnaire: socio-demographic characteristics, medical history, lifestyle
- Weekly questionnaire: reporting of new symptoms and associated behaviors
- All questionnaires are harmonized within member countries of Influenzanet for comparability

Definitions

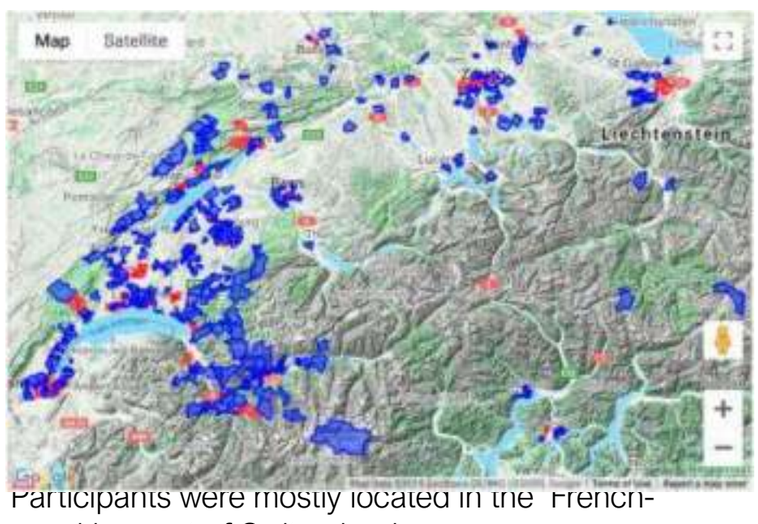
Influenza-like illness
1. Sudden onset of symptoms;
2. AND (fever or fatigue or muscular/articular pain);
3. AND (coughing or sore throat or shortness of breath)

Active User: at least one weekly questionnaire completed within the previous 14 days OR any user who reported an ILI

Results

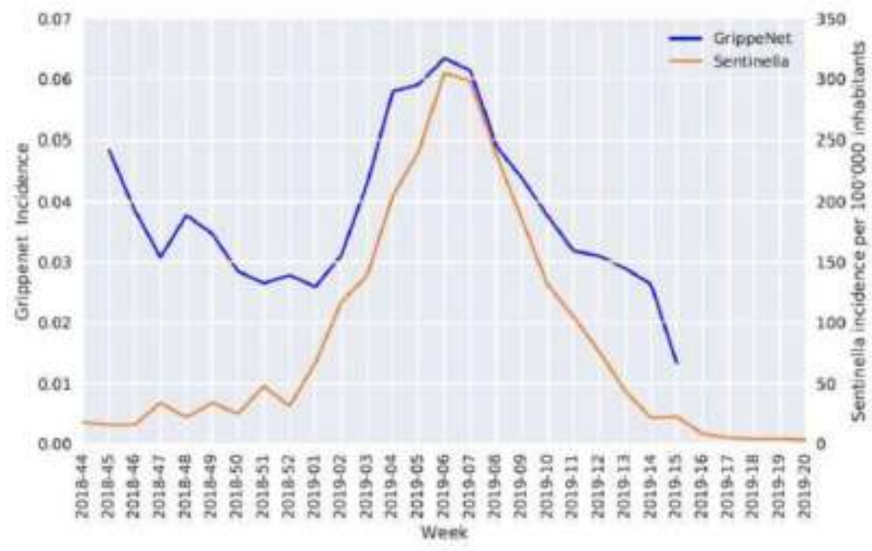
Population description
1247 participants (total users) included between 7 November 2016 and 28 April 2019.
Not representative of the Swiss population:
- More individuals aged 30 to 64
- More women
- Higher level of education
- Larger households
- Lower prevalence of chronic illness
- More respiratory allergies
- Lower prevalence of smoking
- Higher vaccination rate

Geographic distribution: Blue: areas with at least one active user; red: areas with at least one influenza-like illness (ILI) case.



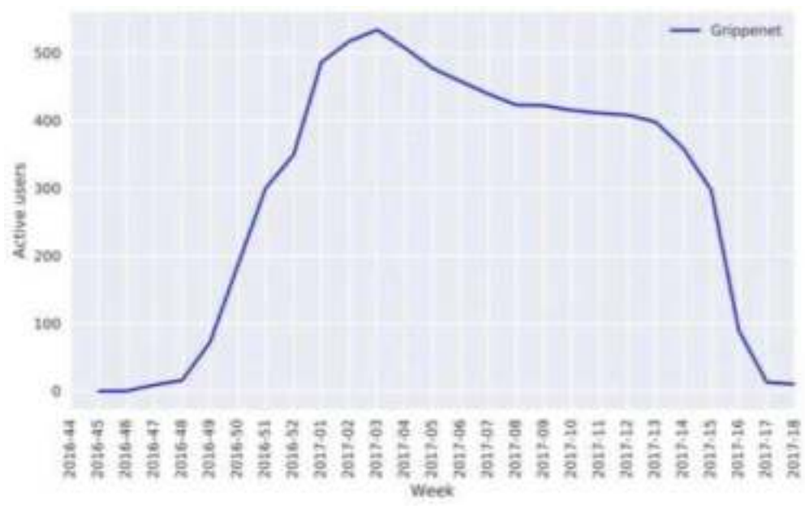
Participants were mostly located in the French-speaking part of Switzerland.

ILI incidence comparison for season 2018-2019
Blue: Grippenet incidence Orange: Sentinella incidence



User participation rate

ILI risk factors
- Ages 0–4 compared with 5–14 (AOR 0.6, 95% CI 0.19–0.99), 15–29 (AOR0.29, 95% CI 0.15–0.60), and 65+ (AOR 0.38, 95%CI 0.16–0.93)
- Female sex (male AOR 0.81, 95% CI 0.7–0.95)
- Respiratory allergies (AOR 1.58, 95% CI 1.38–1.96)
- Not being vaccinated (AOR 2.4, 95% CI 1.9–3.04)
- Self-employment (AOR 1.97, 95% CI 1.33–3.03).



Increase in participation rate at the beginning of influenza season, which declines after ILI peak.

Vaccination rates within risk categories (2018–2019 season)

Age > 65	66.2% (47/71)
Contact Risk	44.5% (81/182)
Chronic Disease	53.8% (35/65)
Pregnancy	50% (1/2)
All users	47.8% (165/345)
All at risk users	51.3% (164/320)

Medical care-seeking behavior Percentage of users reporting one or more ILIs who did not consult a medical doctor

2016–2017	42.5% (183/431)
2017–2018	37.6% (261/695)
2018–2019	36.2% (176/486)
Mean over 3 seasons	38.50%

Conclusion

A participatory monitoring system such as Grippenet can help **monitor ILI cases in a fast and flexible way**, identify **ILI risk factors** and gaps in the **influenza vaccination coverage**, and analyze **medical care-seeking behaviors**. It has the potential to enhance traditional surveillance systems by collecting information in real time from a different population profile, including people who do not seek medical help.

BUILDING HEALTH PLANNING CAPACITY TO ENSURE EVIDENCE-BASED INTERVENTIONS AND FOSTER PARTICIPATION AND ACCOUNTABILITY IN MOLDOVA

Results of Health Profiles Development and Roll-out for Health Planning in Ten Districts of Rural Moldova

Authors

Constantin Rimis[1], Florence Sécula[2], Diana Berari[1]Laura Aaben[4], Ion Salaru[5], Helen Prytherch[2,3] and Ala Curteanu[1]

Introduction

The WHO Health Profile concept provides an assessment of the health status and determinants of health, including risk factors in a given administrative-territorial unit. In Moldova, the Health Profile tool was endorsed in 2014, building on results of the WHO-led initiative. However, little progress has been made with the implementation, especially for health planning and integration of health profiles in local and regional development plans and in health promotion.

SDC's *Healthy Life: Reducing the burden of non-communicable diseases (NCDs)* project is working to improve healthcare-seeking behaviors and reduce NCD risk behavior among the rural population, while also strengthening the quality of NCD prevention, treatment, and management. To advance the policy frame and facilitate greater approval of healthy behaviors, the project has introduced a "health in all policies" approach. This includes supporting the National Agency for Public Heath (NAPH) to advance evidence-based, intersectoral, health promotion interventions through the use of local Health Profiles.

Methods

The Health Profile covers seven areas: 1) population and demography; 2) the health status of the population; 3) economy, labor force and social welfare; 4) children's health and wellbeing; 5) health literacy and behavior; 6) the living environment and 7) the health system infrastructure. The Healthy Life Project facilitated the simplification of the Health Profile tool from 95 originally proposed indicators to 42 NCD-related indicators.

Figure1. Training of multidisciplinary teams on Health Profiles, 2018.

Results

The NAPH has introduced evidence-based health planning at both central and decentralized levels, and the development of Health Profiles in 10 pilot districts. The whole data management process (collection, analysis, interpretation, gap identification and feedback, and dissemination) was clarified, and data to furnish health profiles indicators for the period of 2013-2018 were collected. In tandem, training was provided to local public health experts to analyze and interpret the Health Profile indicators. Additionally, workshops were organized on "How to plan successfully" for teams of District Public Health Councils composed by representatives from Local Public Authorities (LPAs), social, education, health care and other sectors as a members of multisectoral local teams.

As a result, 10 small grant proposals, based on the Health Profiles indicators, were developed and implemented in 2019, increasing intersectoral collaboration and the local capacity on health promotion interventions, addressing the issues of hypertension, type 2 diabetes, obesity, and promoting physical activities and healthy nutrition. Further, health profile data were used by district LPAs for strategic evidence-based health planning and development of intersectoral action plans being in the process of implementation.

Figure 2. Health Profile from Briceni district.

Figure 3. Health Profile from Briceni district.

Being a critical component of health planning – indicating locally relevant health priorities- the resulting Health Profiles for 10 pilot districts were used at village level to raise awareness of LPAs and local stakeholders (health, social, and education sectors, as well as the police force and church) and stimulating them to actions for health promotion and NCD prevention and control. Thus, the Health Profiles were disseminated at village level to help to close the information gap on evidence-based health issues and priorities by bringing the data to the lowest level of action for health promotion (communities).

Based on districts Health Profile results and participatory asset mapping of the village resources for health performed by local group members in 20 pilot localities, community coalitions for Health Promotion were built to foster not only collaboration but also greater accountability to tackle health issues at community level.

Conclusions

The Health Profile data were largely disseminated at all levels, and their use for health planning and intervention design was systematically integrated in the health promotion work with district and community partners. The process of building capacity to prepare and use Health Profiles created common community values and empowered citizens to identify their needs for health. This process improved the link between LPAs, institutions, and services and motivated inter-institutional and intersectoral cooperation for more efficient planning using limited resources.

Figure 4. Asset mapping meeting, 2019.

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IMPLEMENTING WITHOUT GUIDELINES: LEARNING AT THE COALFACE

A Case Study of Health Promoters in an Era of Community Health Workers

Authors

Teurai Rwafa-Ponela, John Eyles, Nicola Christofides and Jane Goudge

DOI: https://doi.org/10.1186/s12961-020-00561-5

Introduction

- Internationally, there has been renewed focus on primary healthcare (PHC). PHC revitalization is one of the mechanisms to emphasize health promotion (HP) and disease prevention.
- However, it is not always clear who should lead HP activities. In some countries, HP practitioners (HPPs) provide HP; in others, community health workers (CHWs) are responsible.
- South Africa, like other countries, has embarked on reforms to strengthen PHC, including a nationwide CHW programme—resulting in an unclear role for pre-existing health promoters.

Study Aim

The study examined the tension between two cadres (health promoters and CHWs) in two South African provinces in an era of a primary health reform.

Figure 1. Ward-based outreach teams (WBOTs).

Methods

Study Design: A qualitative case study.

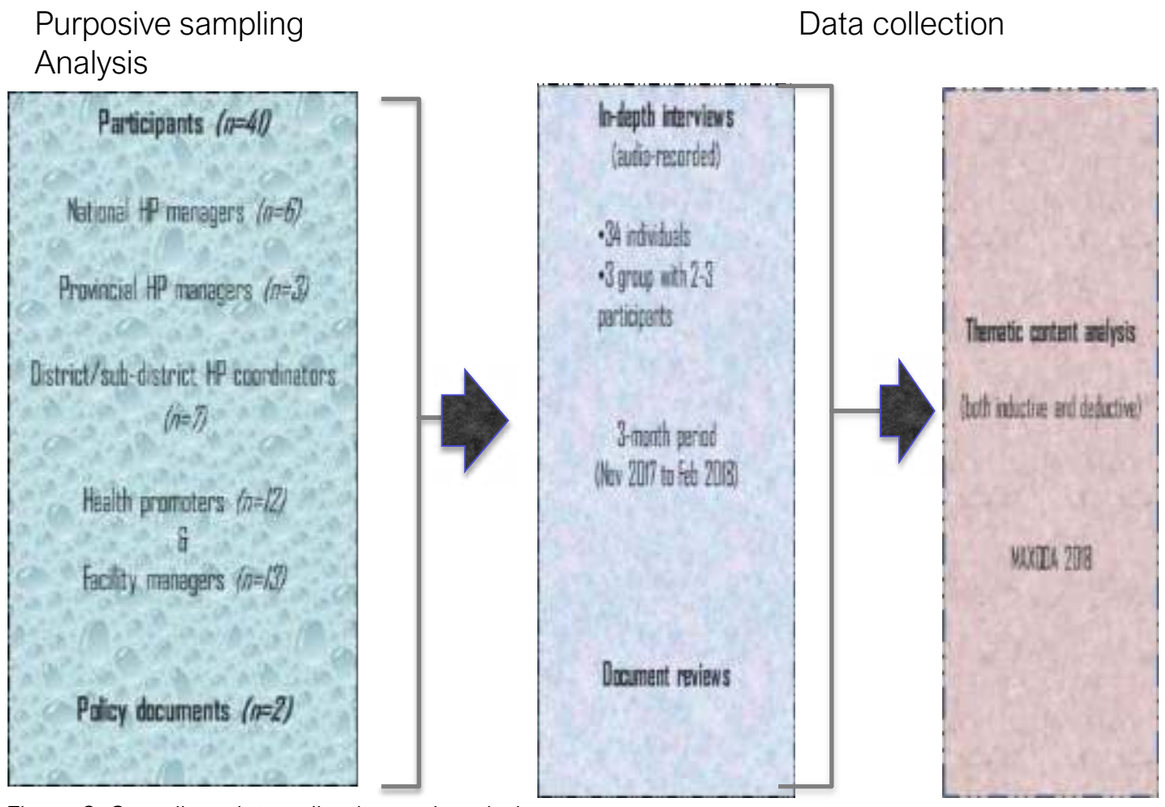

Figure 2. Sampling, data collection and analysis.

Introduction of policy

Table 1: Introduction of policy

Role of HPPs according to the rPHC provincial implementation guidelines (2011)	Role of HPPs in rPHC according to the HP Policy and Strategy (2015-2019)
Acknowledges the role of health promoters at community level and describes their role in ward based outreach teams (WBOTs)	HP should be aligned with the PHC re-engineering (rPHC) programme in order to enhance, complement and strengthen HP in communities, schools and health facilities.
HPPs need to provide technical support and assistance pertaining to HP activities at community level based on local needs: a) Develop and disseminate HP messages b) Identify appropriate and relevant HP material for use and distribution, and c) Use a range of HP tools	HPPs to support community health workers (CHWs) and WBOTs to plan and implement community and social mobilization efforts.
HPPs assist and support CHWs through providing health information and updates on HP activities in line with the health calendar	HP Strategic Plan (2015-2018) supporting PHC outreach teams to implement HP programmes

Conceptual Framework

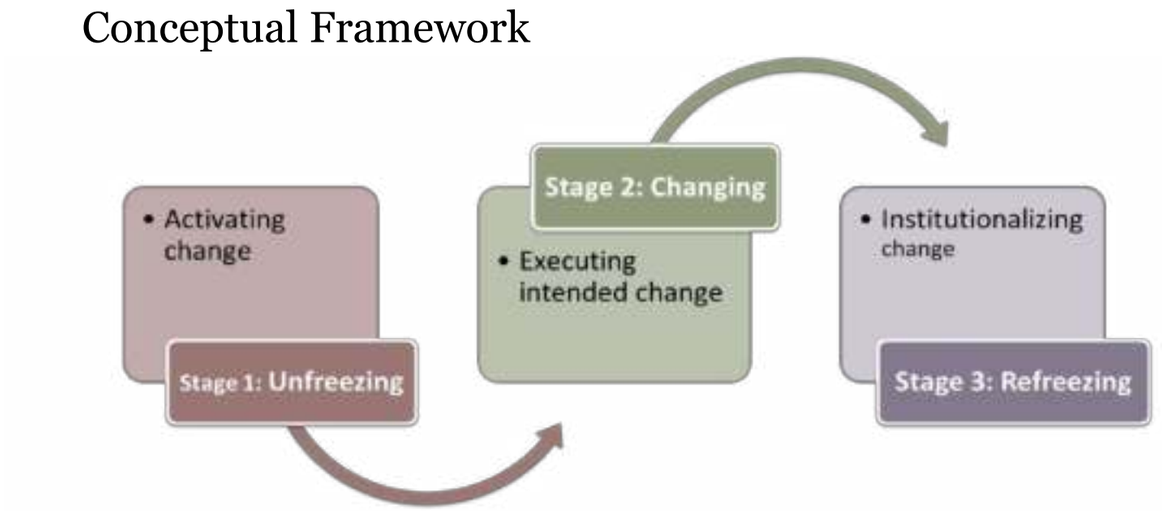

Figure 3. Lewin's three-step change model.

Findings

The introduction of CHWs triggered anxiety and uncertainty among some health promoters due to considerable role overlap between the two cadres.

- Two South African policy documents, one on PHC reform and the other on HP, were introduced and implemented without clear guidelines on how health promoter job descriptions should be altered in the context of CHWs.
- However, in the absence of formal re-orientation processes to re-align their roles, some HPPs have carved out a role for themselves, supporting CHWs, for example:
  - Providing up-to-date health information;
  - Jointly discussing how to assist with community health problems;
  - Providing advice;
  - Household-visit support.

Discussion

Table 2. Organizational change in this study using Lewin's three-stage model.

Stage	Organizational action that occurred	Factors for or against working together	
		Facilitators	Barriers
Unfreeze	Policy makers introduce rPHC and the HP policy and launch the new reform	• Community-based role of HPPs	• Lack or re-alignment of HPP roles: ✓ job descriptions ✓ re-training
Change	HPPs experiment with the new CHW and WBOTs strategy engagement to deal with needed change	• HPPs as forerunners of the CHW programme	• Role overlap • More attention and resources towards CHWs • Anxiety and trepidation among HPPs
Re-freeze	HPPs institutionalize new change into their practice culture	• Training of CHWs • Working at part of one WBOT	• Two cadres, and their management structures, working parallel

Conclusion

- This study adds to recent literature on the current wave of PHC reforms. It describes how health promoters are 'working it out' on the ground, when the policy or process do not provide adequate guidance or structure.
- Lessons learnt on how these two cadres could work together are important, given the shortage of human resources for health in LMIC settings.
- This is a missed opportunity; researchers and policy makers need to think more about how to feed experience/tacit knowledge up the system.

Policy Recommendations

- Policy makers and HP managers (at the top) can learn from innovation within facilities (at the bottom) and develop formalised operational guidelines and direction for HPPs' routine practices, particularly within the PHC reform.

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HEALTH PROMOTION CAPACITY AND INSTITUTIONAL SYSTEMS

A Three-Level Assessment of the South African Department of Health

Authors

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DOI: https://doi.org/10.1093/heapro/daaa098

Introduction

- In the early 2000s, the WHO introduced a global initiative to map country-level capacity for health promotion (HP), to determine gaps and areas that need to be strengthened.
- Effective health-promoting health systems are needed to contribute to population health goals. Thus, promoting health is important to reaching the 2030 sustainable development goals (SDGs).
- HP capacity assessments are a critical component of health system strengthening. Capacity-strengthening efforts can only be made if HP practitioners, researchers and policy makers are aware of what HP capacities exist at baseline.

Study Aim

The aim of this study was to assess organizational capacity and institutional systems to implement HP across three levels of the South African Department of Health (DoH).

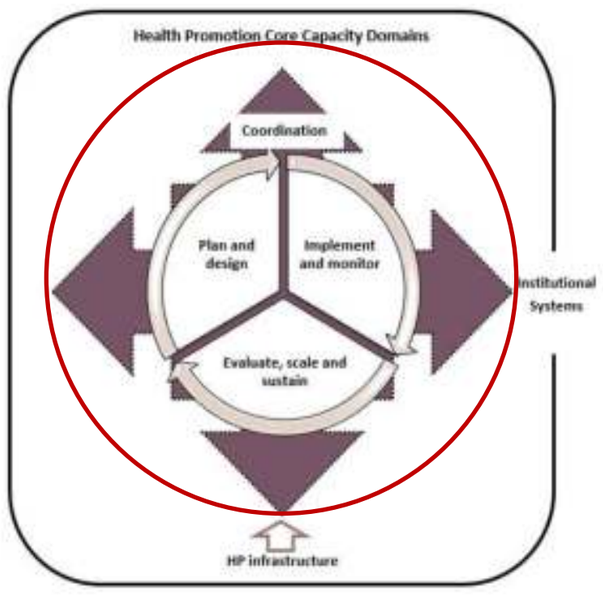

Figure 1. Health promotion capacity assessment tool.

Methods

Design and data collection

- A cross-sectional mixed-methods study was conducted.
- Qualitative and quantitative data were collected using a participatory assessment tool.
- A four-point (1–4) Likert scale was used to measure consensus scores.

Study sites and sample

- Purposive selection of sites was based on the availability of HP structures from regional to local levels.
- Five one-day workshops were held to gather data (Dec 2017–Feb 2018)
- Ethics approvals were sought from Wits HREC and the DoH.

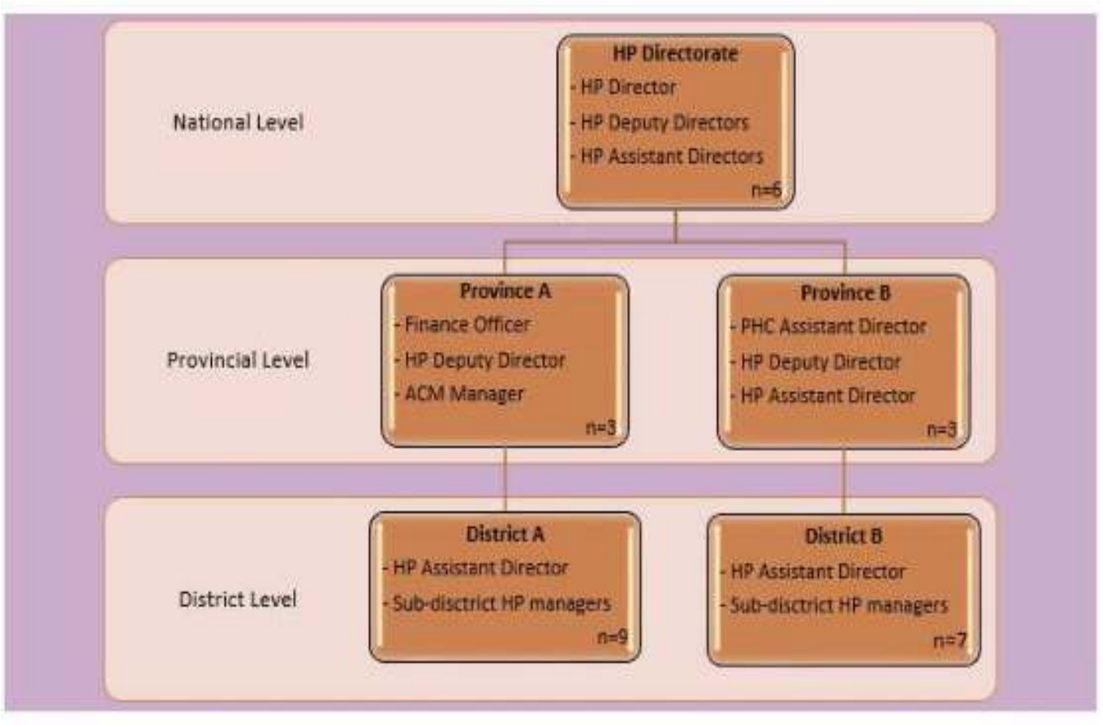

Figure 2. Sample for the health promotion capacity assessment workshops, (n=28).

Data analysis

- Quantitative data: consensus scores were analyzed and presented as means with standard deviations using STATA 13.
- Qualitative data: thematic content analysis of workshop discussions was conducted with the aid of MAXQDA 2018.

Acknowledgements

- Authors would like to thank all study participants for their valuable contributions.
- This work was supported by DST-NRF/SARChi in Health Systems and Policy, at CHP, Wits SPH

Key Results

- Observations showed that the one-day workshops provided participants with a first-time opportunity to collectively reflect of their jobs and roles.
- Capacity gaps existed across all three-levels of the DoH, and domains assessed, with a mean score of 2.08 (SD=0.83) out of a possible 4 points.
  - This was compounded by serious structural disconnects between national and provincial levels.
  - Limited priority setting, monitoring and evaluation of the HP programme occurred.
  - The district health information system does not collect any HP specific indicators.
  - No external coordination role, or internal within the DoH.
  - Lack of HP specific training among designated HP staff was emphasized.
  - Budgetary and resource constraints emerged as a major challenge, with participants reporting limited resources to conduct activities at any level.
  - Institutional constraints highlighted in the findings reduce the full potential of HP capacity in the

Capacity Domains: Qualitative Results

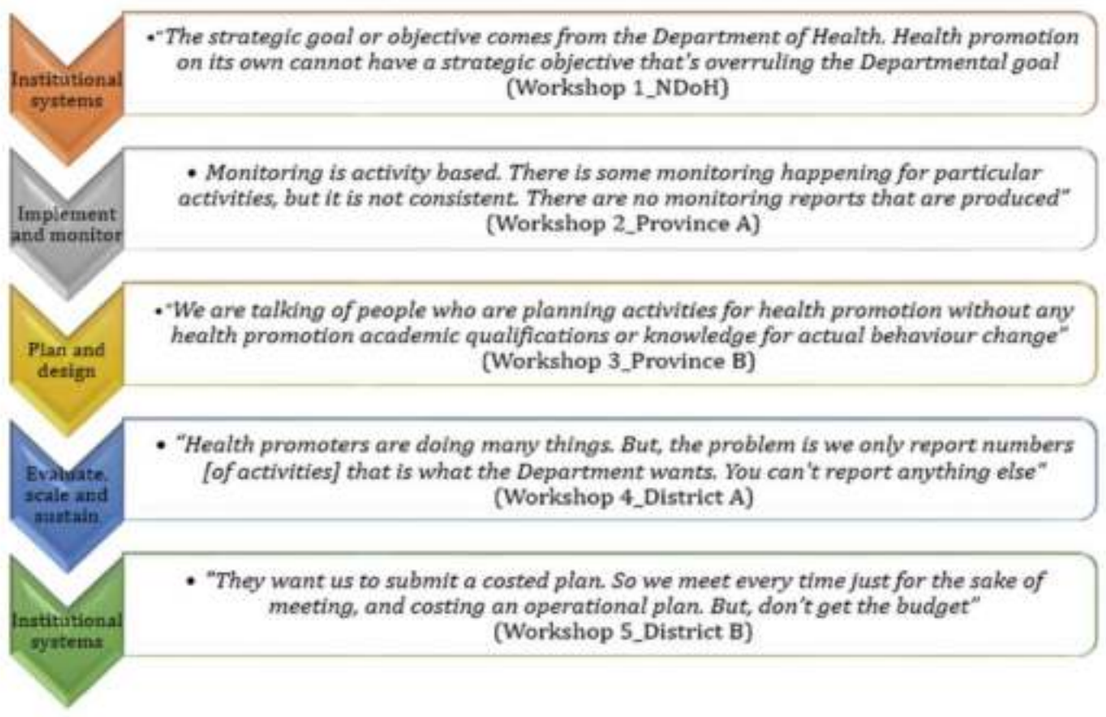

Figure 3. Themes and quotes from the workshop discussions on the four capacity domains.

Capacity Domains: Quantitative Results

Table 1. Organizational capacity scores to implement health promotion.

HEALTH PROMOTION DOMAINS	NATIONAL LEVEL	PROVINCIAL LEVEL		DISTRICT LEVEL		MEAN SCORES (SD)
	National	Province A	Province B	District A	District B	
	W1	W2	W3	W4	W5	
Plan and design	1.55 (0.58)	1.43 (0.46)	2.14(0.15)	1.85 (0.32)	2.31 (0.95)	***1.85 (0.34)***
Implement and monitor	1.67 (0.33)	1.91 (0.73)	3.10 (0.14)	1.49 (0.12)	3.09 (0.73)	***2.19 (0.71)***
Evaluate, scale and sustain	1.28 (0.25)	1.22 (0.39)	1.44 (0.51)	1.33 (0.58)	2.00 (1.25)	***1.44 (0.28)***
Institutional systems	2.32 (1.00)	3.33 (0.83)	2.78 (0.99)	2.22 (1.07)	3.22 (0.48)	***2.82 (0.51)***
OVERALL MEAN SCORES	***1.70 (0.79)***	***1.97 (1.13)***	***2.37 (0.83)***	***1.70 (0.72)***	***2.66 (0.90)***	***2.08 (0.83)***

**Key for the presence or absence of function and or system Stage 1 ≥1.00-1.49= absent/not present; Stage 2 ≥1.50-2.49= present, limited capacity; Stage 3 ≥2.50-3.49= present, regular capacity; Stage 4 ≥3.50-4.00=present, full capacity.*

Conclusions and Policy recommendations

- There is a need to overcome institutional barriers and strengthen HP capacity within the South African DoH.
- Policy makers need to address capacity development initiatives, training and recruitment among the designated HP workforce, in order for HP governance, policy and strategic plans to be fully realized and meet health system strengthening goals.

Study limitations

- Reaching consensus for a particular score that suited everyone was not always easy.
- In some instances, there were suggestions of social desirability bias, where participants overstated their capacity.

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PROTECTIVE AND RISK FACTORS FOR MENTAL HEALTH OF CHILDREN OF ASYLUM-SEEKERS AND REFUGES

A Cross-Sectional Study at the Pediatric Migrant Health Clinic of Geneva

Authors

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Introduction

Recent migratory and sanitary crises across the globe have drawn unprecedented attention to the complexity of migration and its impact on health. Children of refugees constitute a vulnerable group as circumstances during forced migration may compromise their basic rights, development and wellbeing. They are at increased risk of developing mental health and psychosocial problems. Factors related to all three phases of migration (predeparture, travel and settlement) may have a protective or detrimental effect on mental health. Improving our understanding of these factors will allow recognition of vulnerable children and implementation of psychosocial interventions tailored to their needs. An explorative study was carried out at the Geneva University Hospitals (GUH) to provide a snapshot view of the psychological vulnerability of children of asylum-seekers and refugees in the canton of Geneva.

Objective

Explore protective and risk factors for mental health of child refugees* in Geneva from **chronological** and **socioecological** perspectives.

* For simplicity purposes, "child refugees" refer to children of asylum-seekers and refugees

Figure 1 The three phases of migration.

Methods

This cross-sectional study was conducted at the Pediatric Migrant Health Clinic of the GUH.

Study populations included:

1. Refugee children **with** identified psychological dysfunction
2. Refugee children **without** identified psychological dysfunction

Data collection:

- Verbal questionnaire administered to parent about migratory-related factors (children > 6 years old were also questioned)
- Subjective assessment of children's vulnerability and resilience

Statistical analysis: Comparison achieved by independent *t*-test (or Wilcoxon rank sum) and Chi-square test (or Fisher's exact test); $p < 0.05$

Results

30 children (2-14 years old) were included in **sample 1 "without identified psychological dysfunction"** and in **sample 2 "with identified psychological dysfunction"**. Children in sample 2 were older (8 vs 6 years old) and had been residing in Switzerland for longer time (23 vs 14 months). There were more boys (63%) than girls (37%) in sample 2 whereas gender was more balanced in sample 1.

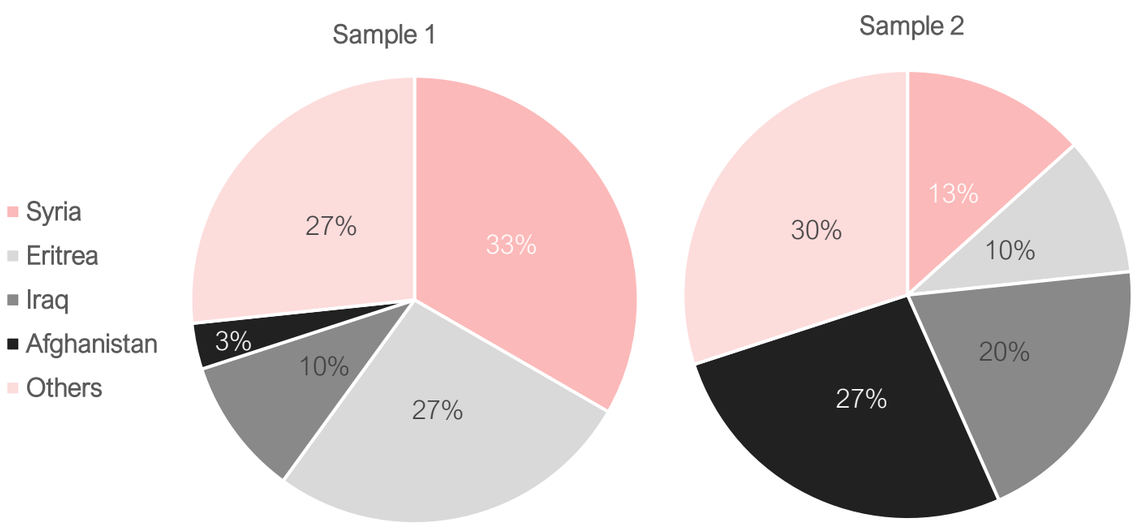

Figure 2. Country of origin in both samples.

Most children in sample 1 (47%) held a residence permit with refugee status whereas most subjects in sample 2 (43%) held a provisional admission permit.

Protective and risk factors from all three migratory phases are associated with children's psychological state. Children's exposure to trauma in any phase of migration is associated with psychological dysfunction. Parental psychological status is also associated with worst mental health outcomes in children possibly due to abnormal or ineffective parent-child interactions.

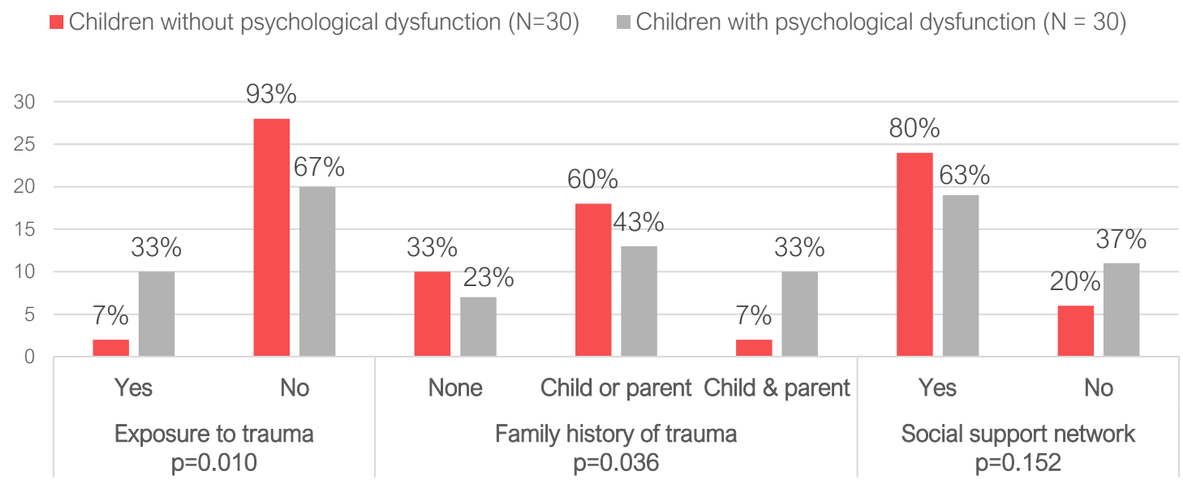

Figure 2. Exposure to protective/risk factors related to premigratory phase.

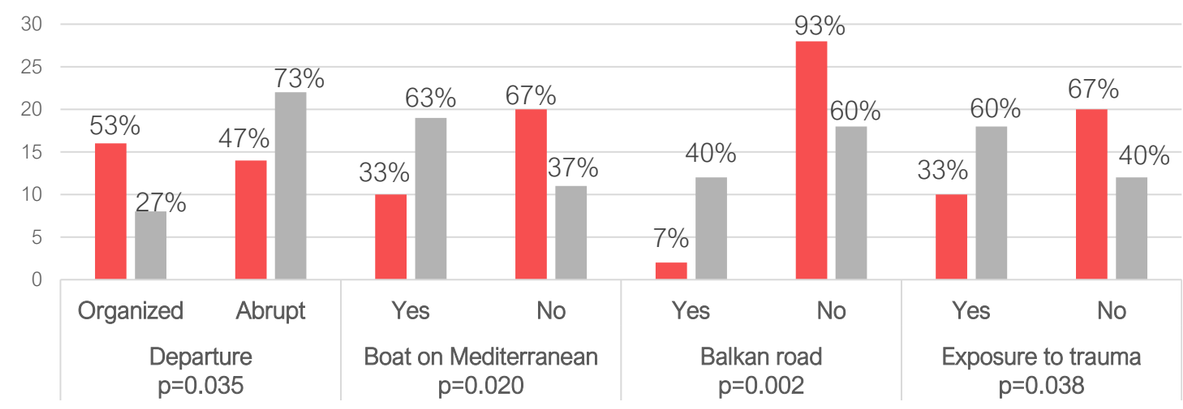

Figure 3. Exposure to protective/risk factors related to travel phase.

Overall, the median duration of migratory trajectories was 90 days and median stay in temporary refugee settlements for those exposed was 70 days. There was no difference between samples.

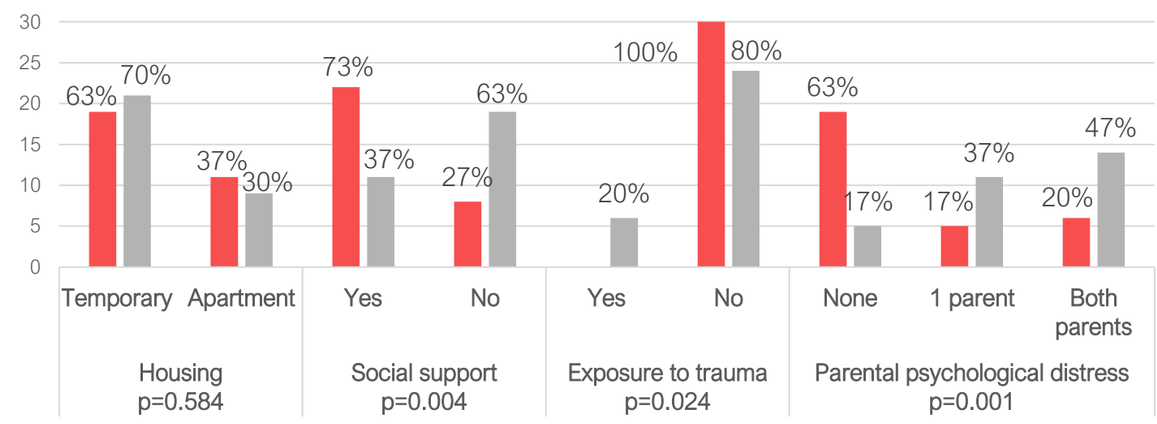

Figure 4. Exposure to protective/risk factors related to settlement.

Mean duration stay in temporary accommodations "foyers" was significantly different: 12.4 months (sample 1) compared to 18.8 months (sample 2), p=0.022. However, there was no difference noted regarding mean time for asylum claim processing.

Vulnerability/Resilience Assessment

Surprisingly, 30% and 37% of children in sample 1 were perceived, respectively, at high and moderate vulnerability. These children were not benefitting from any specific psychosocial support.

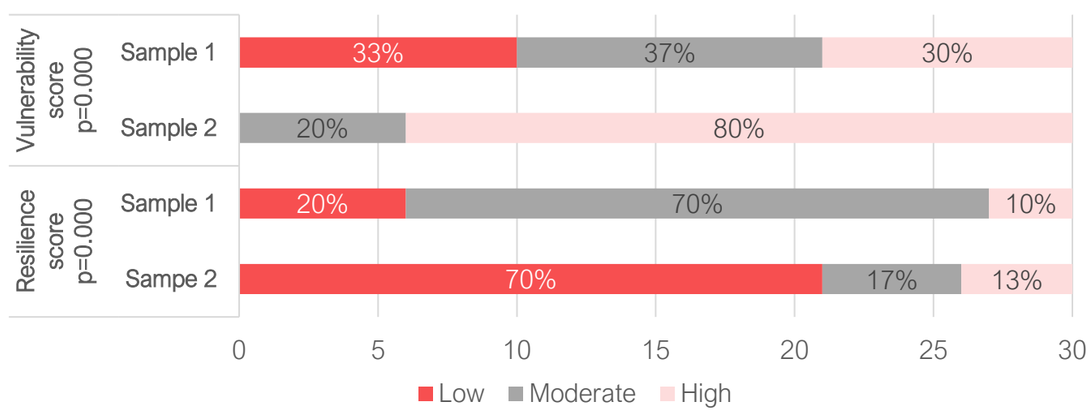

Figure 5. Vulnerability and resilience scores of subjects.

Focused interventions made readily available could benefit vulnerable children with the aim of preventing occurrence of psychological symptoms and dysfunction by strengthening their coping strategies and resilience.

Conclusion

Identification of protective and risk factors for mental health outcomes in children of asylum-seekers and refugees is crucial. It allows proper assessment of their individual vulnerability and resilience capacity as well as their specific needs. Finally, gaps in mental healthcare and psychosocial support provision exist particularly regarding vulnerable children who appear asymptomatic. Preventive care provision in mental health should also become a priority of first-line health workers and health promoters to enable refugee children to thrive and develop to their full potential in host countries.

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ETHNIC DISPARITY AND EXPOSURE TO SUPPLEMENTS RATHER THAN ADVERSE CHILDHOOD EXPERIENCES LINKED TO PRETERM BIRTH IN PAKISTANI WOMEN

Authors

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Introduction

- Adverse childhood experiences (ACEs) including traumatic experiences such as abuse, neglect, household dysfunction resulting from alcohol or other substance use, and violence1,2.
- ACEs may impact expecting mothers' mental health.
- Both ACEs and maternal mental health may increase risk of preterm birth in a dose-response relationship.3,4
- Women in low- and middle-income countries frequently experience the most severe ACEs, antenatal mental health disorder, and adverse pregnancy outcomes.
- To the best of our knowledge this is the first study to examine the influence of ACEs on maternal mental health and pregnancy outcome for women residing in LMIC, specifically, Karachi, Pakistan.

Objective

To examine the impact of adverse childhood experience on prenatal mental health and preterm birth among women residing in Pakistan

Method

Study Design

- A prospective cohort study examining patterns of psychosocial and biological responses across the continuum of pregnancy
- 300 Pregnant women were recruited at 12-19 weeks' gestation and followed at 22-29 weeks' gestation and also at delivery at four centres of the Aga Khan Hospital for Women and Children in Karachi, Pakistan.

Instruments

- Self-report questionnaire on potential covariates – demographic factors, behavioural factors, pre-pregnancy characteristics, pregnancy
- World Health Organization 31-item ACEs– International Questionnaire (ACE-IQ)
- 10-item Perceived Stress Scale
- 10-item Pregnancy-Related Anxiety Scale
- 10-item Edinburgh Perinatal Depression Scale
- Birth outcome data was obtained from medical records and postnatal wards of the four centres

Statistical Methods

A predictive multiple logistic regression model for preterm birth (PTB; i.e., < 37 weeks' gestation) was developed from variables significantly (P < 0.05) or marginally (P < 0.10) associated with PTB in the bivariate analyses..

Results:

- Of the 300 pregnant women enrolled in the study, 263 (88%) returned for delivery and were included in the analysis.
- The PTB rate was 11.1%.
- We found no association between the ACE-IQ and PTB

PTB and socio-demographic/psychosocial factors

Mother's education level (*P* = 0.011), mother's ethnicity (*P* = 0.010), taking medications during pregnancy (*P* = 0.006) were associated.

Variable	Categories	n	No PTB n (%)	PTB n (%)	P-value
Mother's Education	No Formal School/Primary School	65	51 (78.5%)	14 (21.5%)	0.011
	Secondary or High School Completed	59	54 (91.5%)	5 (8.5%)	
	Attended or Completed Post-Secondary Studies	92	83 (90.2%)	9 (9.8%)	
	Attended or Completed Graduate studies	47	46 (97.9%)	1 (2.1%)	
Mother's Ethnic Group	Muhajirs	78	74 (94.9%)	4 (5.1%)	0.010
	Sindhi	52	50 (96.2%)	2 (3.8%)	
	Memon	40	34 (85.0%)	6 (15.0%)	
	Other	93	96 (81.7%)	17 (18.3%)	
Medications	Yes	145	122 (84.1%)	23 (15.9%)	0.006
	No	118	112 (94.9%)	6 (5.1%)	

Table 4a: Categorical demographic and other variables: relationship to PTB.

Age at birth of first child or current age if primiparous (*P* = 0.049) and age at marriage (*P* = 0.0918) emerged as significant in bivariate analyses

	Birth Outcome		
	No PTB(SD) n=234	PTB(SD) n=29	P-value*
Current Age	26.8 (4.5)	27.0 (5.3)	0.839
Age at marriage	22.8 (3.4)	21.7 (3.4)	0.098
Age at birth of first child (or current age if Primiparous)	23.9 (3.5)	22.6 (3.2)	0.049

PTB=preterm birth; SD=standard deviation

Parsimonious predictive model for PTB

- Mother's education level, mother's ethnicity, taking medications during pregnancy, age at birth of first child or current age if primiparous and age at marriage were included in a multiple regression model along with possible interaction effects between them, to determine a predictive model for PTB.
- Mother's ethnic group and taking medications during pregnancy were the only variables retained.
- Women who were taking medication were almost 4 times more likely to have PTBs compared to those who were not.
- Pairwise-comparison of different ethnic groupings revealed that the prevalence of PTB was marginally lower among Muhajirs and Memon compared to other" ethnic groups.
- No significant interactions were found between any of the five factors included in the model.

Exposure			No PTB n = 234	PTB n = 29	Odds Ratio	95% CI Lower	95% CI Upper	P-value
Mother's Ethnic Group			n (%)	n (%)				
	Muhajirs		74 (94.9%)	4 (5.1%)	2.24	0.38	13.19	0.372
	Sindhi		50 (96.2%)	2 (3.8%)	1.0	referent		
	Memon		34 (85.0%)	6 (15.0%)	5.06	0.95	26.93	0.057
	Other		96 (81.7%)	17 (18.3%)	7.0	1.53	32.08	0.012
Medication During Pregnancy			n (%)	n (%)				
	Yes		122 (84.1%)	23 (15.9%)		referent		
	No		112 (94.9%)	6 (5.1%)	3.56	1.35	9.35	0.01

Table 5: Odds ratios and confidence intervals in parsimonious predictive model for preterm birth.

Discussion and Conclusions

- Ethnicity, socio-cultural and behaviour may inform our understanding of etiologic pathways to preterm birth for women in Karachi, Pakistan.
-
- First study to provide evidence suggesting that pathways to PTB differ between women from high income countries and women in LMIC.
- Future studies should explore further how women's unique emotional reactivity, behavioral response patterns to emotional distress (e.g., medication use), and socio-cultural context influence these associations
- Findings are limited by the relatively small size which precludes direct testing for possible interactive effects

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1.Feiliittii et al., (1988;2018b)
2.World Health Organization (2018)

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DIVERSIFIED USE OF DIGITAL TECHNOLOGY TO NUDGE SOCIAL AND BEHAVIOR CHANGE FOR IMPROVING HEALTH OF THE POPULATION IN INDIA

Authors

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Introduction

Digital technology has the ability to promote behavior change by providing tailored support to individuals across different geographies and socio-economic statuses. It overcomes mobility barriers and increases social-connectedness. The present endeavor aimed to highlight the diversified use of digital technology in social and behavior change communication.

Methods

Project JAGRITI Phase-I, a community-based intervention, was implemented across 15 districts (2016–2018), and Phase-II currently is being implemented in 11 districts of India to bring health-related behavior change among women, adolescents, and children using different approaches, including digital technology. We use multiple digital approaches to transform health-related practices in the society, such as contraceptive uptake, exclusive and early breastfeeding, nutrition of adolescents, quality of antenatal and postnatal care, etc. The multiple digital approaches used to reach different segments of populations have been shown in Figure 1. The success of the intervention was assessed by comparing the change in the twelve outcome indicators at end line over baseline. We used quantitative research methods and a cross-sectional study design during both surveys.

Digital approaches

1. Mobile Application: The JAGRITI mobile app was developed for adolescents to educate them about health and nutrition through games and quizzes. The app has features such as a Body Mass Index calculator for tracking malnutrition and a scribble pad to write down one's thoughts and ideas when in a low mood.
2. Facebook learning: Over 90 Facebook posts were shared to information to adults, adolescents, and parents of adolescents.

Figure 1. Different digital approaches used to reach communities with health messages and capture their data.

3. Jagriti Virtual Conference: A 3-day virtual conference was organized for the staff to share their learnings from the field and learn new issues related to nutrition and COVID-19.
4. WhatsApp: WhatsApp groups were formed with young men to share information about family planning and other health-related issues.
5. SMS (Sandesh Campaign): Short messages on breastfeeding, family planning, hygiene, and maternal nutrition were sent to beneficiaries. We have sent over 70000 messages so far.
6. ODK tool: The open data kit (ODK) tool was used for data collection from the beneficiaries during surveys. We have filled over 14000 data collection forms using ODK.
7. SKEE (Skill and Knowledge Evaluation Exam): The knowledge and skills of outreach program staff were evaluated through online exams (based on pre-fixed criteria) on a periodic basis.
8. Online Management Information System (MIS): We created an online MIS that contains socio-demographic and health-related data from over 2 million people.

Results

A total of 1,642,342 people, including pregnant women, lactating mothers, adolescents, and young couples, were reached through community-based actions. The target populations were provided with structured education sessions, besides being engaged through events and village-level meetings. There was a significant improvement in the health-related behavior of the beneficiaries post-intervention, as shown in Figure 2.

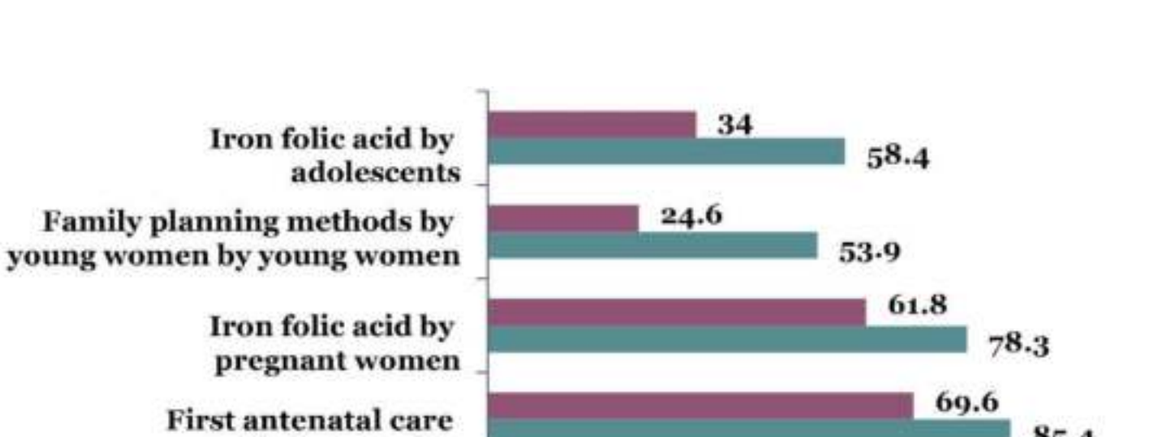

Figure 2. Percent distribution of 12 key outcome indicators among participants at baseline and end line.*

**Adolescents (n=1166[a], n=1358[b]), Pregnant (n=1591[a]; n=1242[b]), Lactatinga (n=1673[a], n=1261[b]), and Married Young Women (n=1657[a]; n=1342[b])*
[a]Baseline; [b]End line

Conclusion

Digital technology is a promising approach to reach the last mile and tailor health messages for the target populations. It can act as a catalyst in transforming primary health care.

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DECISION-MAKING PROCESS AT THE WHO, AND THE INTERNATIONAL RESPONSE TO THE OUTBREAK OF ZIKA VIRUS AND NEUROLOGICAL CONGENITAL DISORDERS

A Critical Security Studies Perspective

Authors

Leandro Viegas and Deisy de Freitas Lima Ventura

The 2015 Zika Outbreak

In July 2015, the Brazilian Government informed the Pan-American Health Organization (PAHO) on an outbreak of an unidentified disease with unknown etiology in the northeastern states of Brazil.
(AGÊNCIA BRASIL, 2015). PAHO's Director decided to inform Member States on the outbreak in Brazil and to recommend the adoption of precautionary measures to prevent the spread of the disease (PAHO, 2015a,b,c). Over that year, Brazilian authorities expressed their concern on the unprecedented numbers of cases of newborns with microcephaly in the same region as the one in which the unknown disease was spreading. A steep increase in the number of cases of Guillaume-Barré Syndrome (GBS) was also reported, indicating that the disease could be related to the Zika virus.
Health experts in Brazil and abroad started analyzing the etiology of the disease, and established a link between the mothers' infection by the Zika virus and the development of newborns with microcephaly and other neurological conditions (DINIZ, 2016).
The outbreak rapidly affected other countries in the Americas, and called on the attention of global experts and authorities, particularly when Brazil declared a public health emergency of national concern in November, 2015 (BRASIL, 2015). The escalation of global cases pushed Dr. Margaret Chan, Director-General (DG) of the World Health Organization (WHO) to convene an Emergency Committee (EC)on the Zika virus and microcephaly that recommended the declaration of a Public Health Emergency of International Concern (PHEIC) on 1 February 2016 (WHO, 2016[a]). A few weeks later, Dr. Chan paid a visit to Brazil, in which she expressed her satisfaction on how the government of Brazil was handling the crisis and controlling the spread of the virus and of its vector, the Aedes aegypti mosquito (G1,2016).

The EC met four other times over the course of that year, but for the purposes of that work, the meeting of outmost importance was the third, held a few weeks before the beginning of the Olympic and Paralympic Games in Brazil. During that meeting, the EC acknowledged that Brazil was taking all necessary steps to curb the spread of the virus (WHO, 2016b; 2016c), and stated that the risk of contamination was considered low, since the Games would be held in the usually dry winter times in Brazil (when it is harder for mosquito larvae to thrive). The EC met two other times after the Games and, on its last meeting, it recommended the suspension of the PHEIC since the knowledge on the dynamics of the disease had reached a relatively safe point, and Zika had become an endemic disease needing regular monitoring by the WHO and member states (WHO, 2016d). On the basis of the EC's recommendations, the DG lifted the PHEIC in November 2016. In Brazil, the emergency was only lifted in May 2017.

Why was Zika considered a PHEIC?

The main objective of this work is to understand both internal and external mechanisms of the WHO that lead to the declaration of a PHEIC for some diseases and not to others. The main question is why the WHO convened an EC for Zika if the same mosquito was capable of also transmitting dengue, chikungunya, and other infectious diseases that were never the object of a PHEIC, but are highly prevalent in the global population. In order to investigate how and why a PHEIC is declared, the first thing to do is to try and understand what a PHEIC really means (Ventura, D., 2016; Heymann D. et al., 2016).

The Global Health Vigilance Apparatus

The current surveillance system of infectious diseases has its origins in the 19th century, during which a series of international sanitary conferences were held to try and establish widely accepted protocols for the control of infections. Before, some well-knownmeasures had already been used by national governments, such as quarantines, curfews, and the infamous "lazaretti". The 9th International Sanitary Conference held in Paris in 1894 mainly focused on how to avoid the spread of diseases so as to not disturb the flow of international trade and travel. These outcomes represent the "classical regime of governance of infectious diseases" (Fidler, 2005). The technical and scientific advancements of the 20th century with the establishment of international organizations such as the WHO in the 1940s synthetized those measures into the InternationalSanitary Regulations (ISR) in 1951, which focused only on six infectious diseases (cholera, plague, yellow fever, smallpox, typhus, and relapsingfever). The ISR (1951) were revised in 1969 to shorten the list of diseases to only three, but over the 1970s and 1980s, it started to show its limitations (Weir, L. and Mykhalovskiy, 2010). First, differently from what was believed until then, there was a growing perception that the world was not free from communicable diseases, old and new (emergent and re-emergent). Second, there was a growing perception that national governments were not transparent on the circulation of pathogens. They seemed to be afraid of being "named and shamed" for having a disease in their territories, which could lead to impediments to the circulation of people andmerchandise.
Third, in spite of the resistance of national governments to provide reliable epidemiological information, global experts established information networks of epidemiological information, including experts from the WHO's Secretariat. These networks provided regular and timely information on current outbreaks. There was clearly a need for the revision of the system of disease surveillance based on the classical regime.
Most importantly, there was growing concern about the use of biological agents as weapons, such as the sarin gas attacks in Tokyo in 1995 or the attacks by anthrax to US senators in 2001. Technological developments on the use of biological pathogens were also a source of fear to the authorities and the public. Some argued that the end of the Cold War demanded that states try and find a new focus for their security concerns, which included the transposition of soft-power topics such as HIV/AIDS, to the traditional arenas of hard-power debates such as the UN General Assembly (Waever, 1995; Elbe, 2008; Davies, 2008; McInnes and Lee, 2012; Nunes,2018). These all led to pressure from developed countries, mainly the United States and European powers to the WHO to revise the IHR (1969), which was finally taken into consideration in 1995, when the World Health Assembly (WHA) approved a resolution (WHO, 1995) to begin the negotiations for new IHR. These took an entire decade and were only unlocked when the outbreak of SARS exposed the fragilities of the classical regime (Davies, Kamradt-Scott, and Rushton,2015).

The IHR approved in 2005 included a new perspective on disease surveillance that focused on public-health events on real time, which set the stage for the Global Health Vigilance Apparatus (Weir and Mikhalovskiy, 2010).
The most important tool of such an apparatus is the Public Health Emergency of International Concern (PHEIC), which can only be declared by the WHO's DG on the basis of EC recommendations. The conception of a PHEIC is not based on the prevalence of a disease, but on symbolic representations of a threat, which maybe the reason why the 2016 PHEIC was not declared on the Zika disease itself, but on the "threat" of newborns with malformations and neurological conditions (Nunes and Pimenta, 2016; Lakoff, 2017; Wenham and Farias, 2019).

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THE IMPACT OF INTERVENTIONS FOR THE PRIMARY PREVENTION OF HYPERTENSION IN SUB-SAHARAN AFRICA

A Systematic Review and Meta-Analysis

Authors

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Background

Africa has the highest prevalence of hypertension globally. 46% of adults aged 25 and above in Sub-Saharan Africa (SSA) are hypertensive as opposed to 45% in America. Persistently high blood pressure is a major risk factor for strokes, cardiovascular and ischaemic heart disease, and a preventable cause of death. There is sparse evidence on the interventions employed in hypertension prevention in (SSA). It is imperative that this growing global epidemic is addressed promptly.

Research Questions

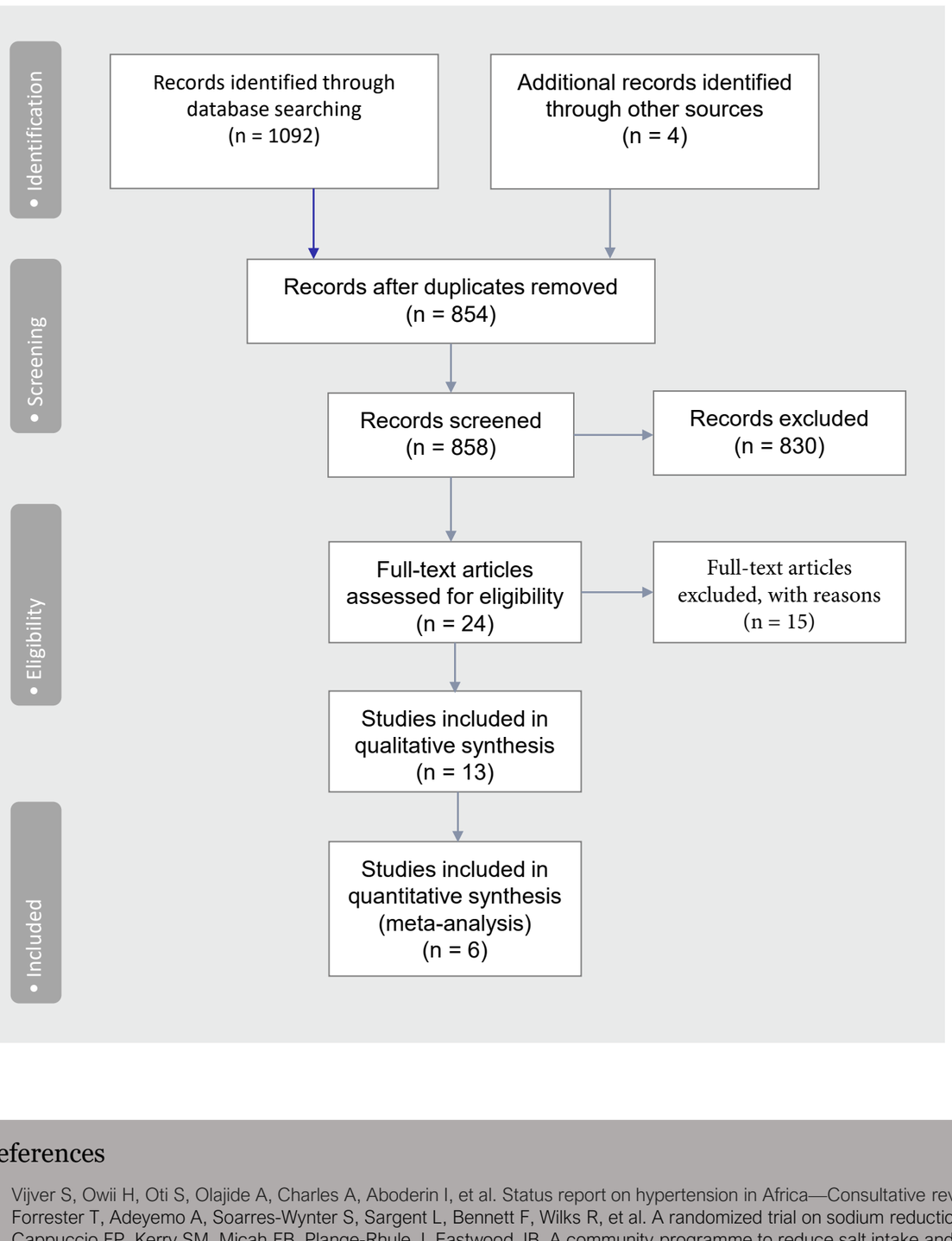
- Are there any population-based or high-risk group interventions for the primary prevention of hypertension in SSA?
- What impacts have these interventions had in decreasing blood pressure, hypertension prevalence, or risk factors?

A Ghanaian nurse screens a patient for hypertension during an outreach activity.
Richard Ofori-Asenso, Irina Ofei, https://degrees.fhi360.org/2015/05/in-ghana-a-louder-approach-to-a-silent-killer-hypertension, Accessed 14/10/2020.

Methods

- We conducted a systematic review and meta-analysis in accordance with PRISMA guidelines. We searched 4 bibliographic databases for studies conducted in SSA between 1970 and 2019, on the 4th -17th January 2018 and the 5th of May 2019.
- We included studies of any design or language, conducted in whole populations, communities and high risk groups.
- Systematic reviews, conference abstracts, editorials, and studies with no outcome data or those conducted on hypertensive patients were excluded.
- Following data extraction and quality assessment, a qualitative synthesis was carried out on 13 articles and a meta-analysis on 6.
- The 13 studies were published between 1990 to 2017, with sample sizes ranging from 30 to 559,834.
- The meta-analysis was carried out using pooled mean differences and a random effects model of the generic inverse variance option in RevMan.
- Funnel plots and Egger's test were used to evaluate potential publication bias.
- Potential sources of heterogeneity were further investigated by meta-regression using the Robumeta package in R.

Prisma study selection flow diagram

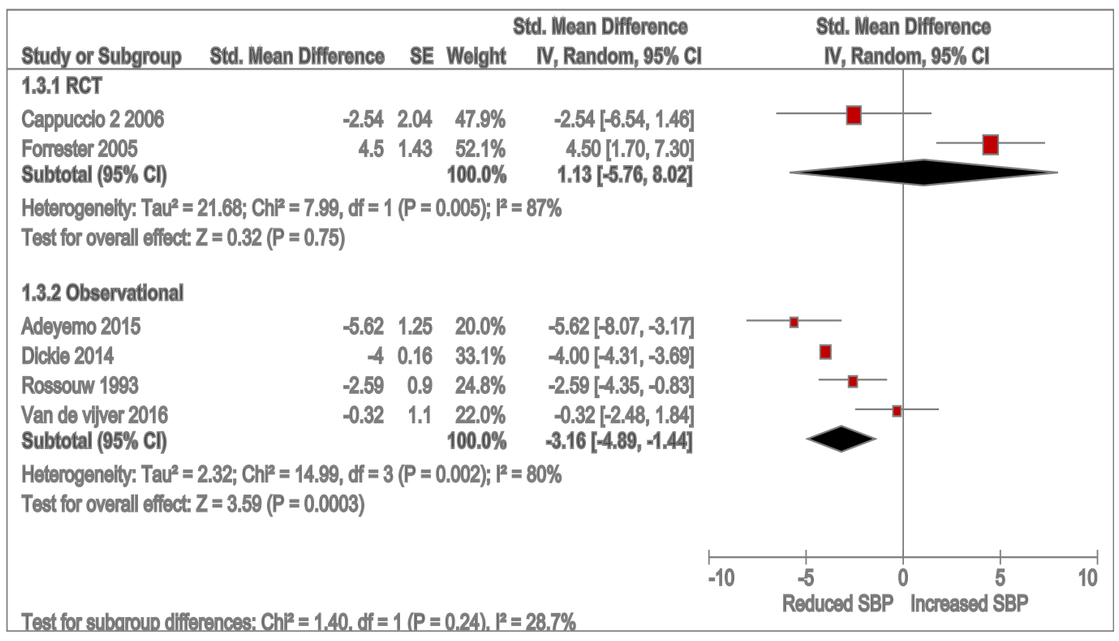


Results

- We observed a reduction in systolic blood pressure of -3.3mmHg (95%CI -4.64 to -1.96) and a reduction of -2.26mmHg (95%CI -6.36 to 1.85) in diastolic blood pressure, which was not statistically significant(p = 0.28).
- A moderate to significant heterogeneity was observed (I^2 = 68% and 99%) for the systolic and diastolic blood pressure respectively.
- Intervention and study design accounted for 100% heterogeneity for both systolic and diastolic blood pressure (r^2 = 100%).
- Egger's test for funnel plot asymmetry was calculated, with p = 0.27 for SBP and 0.02 for DBP.

Study characteristic	Sub-components	Number of studies
Study design	Cross-sectional	6
	RCT	2
	Quasi experimental	5
Intervention	Health promotion	7
	Food price reduction	1
	Salt reduction	4
	Physical activity	1
Countries	South-Africa	5
	Ghana	3
	Nigeria	2
	Tanzania	1
	Mauritius	1

Systolic and Diastolic blood pressure forest plots



Std. Mean Difference
Std. Mean Difference
Study or Subgroup Std. Mean Difference SE Weight IV, Random, 95% CI
IV, Random, 95% CI
1.3.1 RCT
Cappuccio 2 2006 -2.54 2.04 47.9% -2.54 [-6.54, 1.46]
Forrester 2005 4.5 1.43 52.1% 4.50 [1.70, 7.30]
Subtotal (95% CI) 100.0% 1.13 [-5.76, 8.02]
Heterogeneity: Tau² = 21.68; Chi² = 7.99, df = 1 (P = 0.005); I² = 87%
Test for overall effect: Z = 0.32 (P = 0.75)
1.3.2 Observational
Adeyemo 2015 -5.62 1.25 20.0% -5.62 [-8.07, -3.17]
Dickie 2014 -4 0.16 33.1% -4.00 [-4.31, -3.69]
Rossouw 1993 -2.59 0.9 24.8% -2.59 [-4.35, -0.83]
Van de vijver 2016 -0.32 1.1 22.0% -0.32 [-2.48, 1.84]
Subtotal (95% CI) 100.0% -3.16 [-4.89, -1.44]
Heterogeneity: Tau² = 2.32; Chi² = 14.99, df = 3 (P = 0.002); I² = 80%
Test for overall effect: Z = 3.59 (P = 0.0003)
Test for subgroup differences: Chi² = 1.40, df = 1 (P = 0.24), I² = 28.7%
-10 -5 0 5 10
Reduced SBP Increased SBP

Conclusion

- Our findings suggest that salt limiting and health promotion interventions can be effective in modifying risk factors of hypertension, and by extension reducing blood pressure.
- We recommend that more population-wide, high quality, representative studies need to be conducted in more SSA countries to explore the effectiveness of the interventions we described and to better inform public health policy and practice.
- Also, study outcomes need to be reported in formats that can easily be extracted for meta-analyses.

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HEALTH FACILITIES CAPACITY FOR DIAGNOSIS AND TREATMENT OF TUBERCULOSIS IN ETHIOPIA

Authors

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Background

Tuberculosis is one of the major public health challenges in Ethiopia. There are limited information on health facilities capacity to offer Tuberculosis services at national level. The purpose of the study is to evaluate the capacity of health facilities to provide Tuberculosis service and, its variations by type of health facilities and regions in Ethiopia.

Methods

Data from the 2018 Ethiopian Service Availability and Readiness Assessment (SARA) survey were used. The data were collected from all regions of the country. The overall Tuberculosis service readiness score was calculated by considering twelve Tuberculosis tracer items. Mean availability was considered for measuring health facilities overall capacity to provide Tuberculosis service. Multiple linear regression was done to assess the association of selected health facilities characteristics with overall readiness score.

Result

A total of 632 health facilities were included in the analysis. Twenty-six percent of the clinics provided Tuberculosis diagnosis, treatment prescription, or treatment follow-up; 18% had national diagnosis and treatment of Tuberculosis guideline; and 16% Tuberculosis smear microscopy diagnostic mechanism. Hospitals had better capacity score (76%) than health centers (69%) and clinics (13%). The overall Tuberculosis service capacity score for urban facilities (60%) was higher than that of the rural (49%) health facilities (β=-0.13, 95% C.I: -0.18,-0.08), Clinics (β=-0.59, 95% C.I: -0.67,-0.52) had lower capacity score than hospitals. Facilities in Afar (β=-0.13, 95% C.I: -0.23,-0.02), Amhara (β=-0.12 95% C.I: -0.19,-0.04), Oromiya (β=-0.12, 95% C.I: -0.20,-0.04) and Somali (β=-0.13, 95% C.I: -0.23,-0.03) regions had lower capacity score than facilities in Tigray.

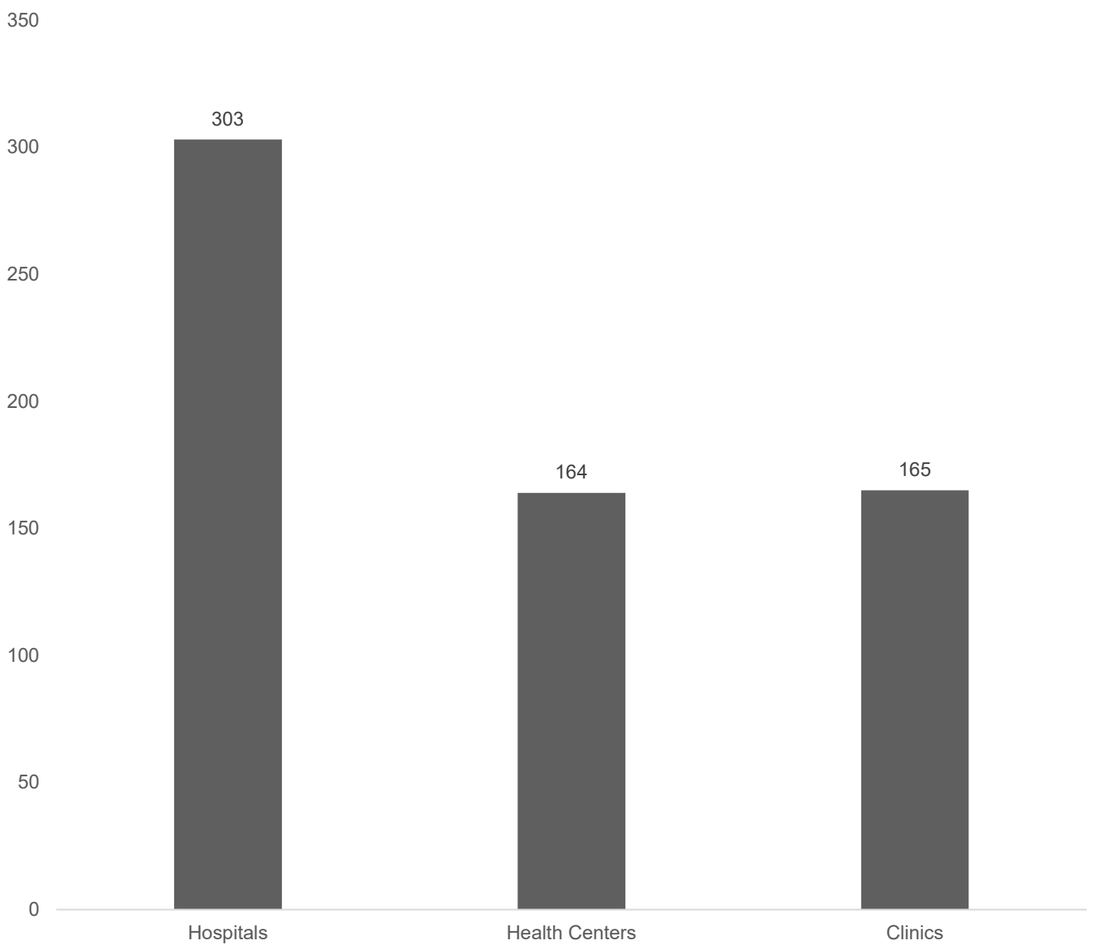

Figure 1. Distribution of health facilities by type, Ethiopia Service Availability and Readiness Assessment 2018.

Conclusion

Hospitals and health centers in Ethiopia had good capacity to provide Tuberculosis service, however low capacity was observed in clinics. There was a significant regional heterogeneity on the capacity of health facilities for Tuberculosis service diagnosis and treatment in Ethiopia. This is also detected by facility type and facility setting. Tuberculosis service improvement interventions should focus on the clinics and the regions whose readiness score is low to ensure equity and its capacity.

Health Facility characteristics	TB diagnosis, treatment prescription, or treatment follow-up n (%)	TB diagnostic testing n (%)	Provision of drugs to TB patients n (%)	Management and treatment follow-up for TB patients n (%)
Type of health facility				
Health centers	150 (91)	146 (89)	147 (90)	148 (90)
Hospitals	289 (95)	289 (95)	284 (94)	284 (94)
Clinics	43 (26)	42 (25)	23 (14)	27 (16)
Managing Authority				
Public	381 (93)	377 (92)	373 (91)	374 (91)
Others	101 (45)	100 (45)	81 (36)	85 (38)
Location				
Urban	388 (79)	387 (78)	363 (73)	368 (74)
Rural	94 (68)	90 (65)	91 (66)	91 (66)

Table 1. TB diagnosis and treatment services by health facility characteristics.

Health Facility characteristics	Crude model		Adjusted model	
	Beta	95% C.I	Beta	95% C.I
Type of health facility				
Hospitals (Ref.)				
Health centers	-0.07	(-0.12 , -0.02)	-0.04	(-0.09 , 0.02)
Clinics	-0.63	(-0.68 , -0.58)	-0.59	(-0.67 , -0.52)
Managing Authority				
Public (Ref.)				
Others	-0.42	(-0.47 , -0.37)	-0.04	(-0.11 , 0.03)
Location				
Urban (Ref.)				
Rural	-0.11	(-0.18 , -0.04)	-0.13	(-0.18 , -0.08)

Table 2. Determinants of TB Serviice readiness score.

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AVAILABILITY AND DISTRIBUTION OF HUMAN RESOURCES FOR EMERGENCY OBSTETRIC CARE SERVICES IN ETHIOPIA

Authors

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Background

Being able to provide emergency obstetric and newborn care requires a frontline team of skilled personnel that includes physicians, surgeons, anesthetists, nurses, midwives and other cadres. Meeting in-country and international standards for the development and distribution of human resources is a key component of a system-wide strategy to lower maternal and newborn death rates. This study uses the findings from the national Ethiopian Emergency Obstetric and Newborn Care Assessment to provide an overview of the status of human resources for health in the country and the availability, distribution and status of in-service training for EmONC.

Methods

We used a secondary data analysis technique of the 2016 Ethiopia Emergency Obstetric and Newborn Care Assessment that included 3804 facilities providing childbirth services. Using the data on overall staffing, we calculated the number of midwives, nurses, physicians, general surgeons, neonatologists, emergency surgical, officers and anesthesiologists in order to make comparisons with national and international benchmarks.

Results

Ethiopia met national standards of health facility staffing much more often than international ones. There is a relatively equitable distribution of health worker cadres across regions, location and managing authorities. Despite policies to accelerate the training of midwives, nurses and health officers in the country, large proportion of these professionals had not received in-service training in either basic or comprehensive emergency obstetric and newborn care services, or on neonatal intensive care, which are critical to saving lives when a woman or her newborn develops or is born with severe complications.

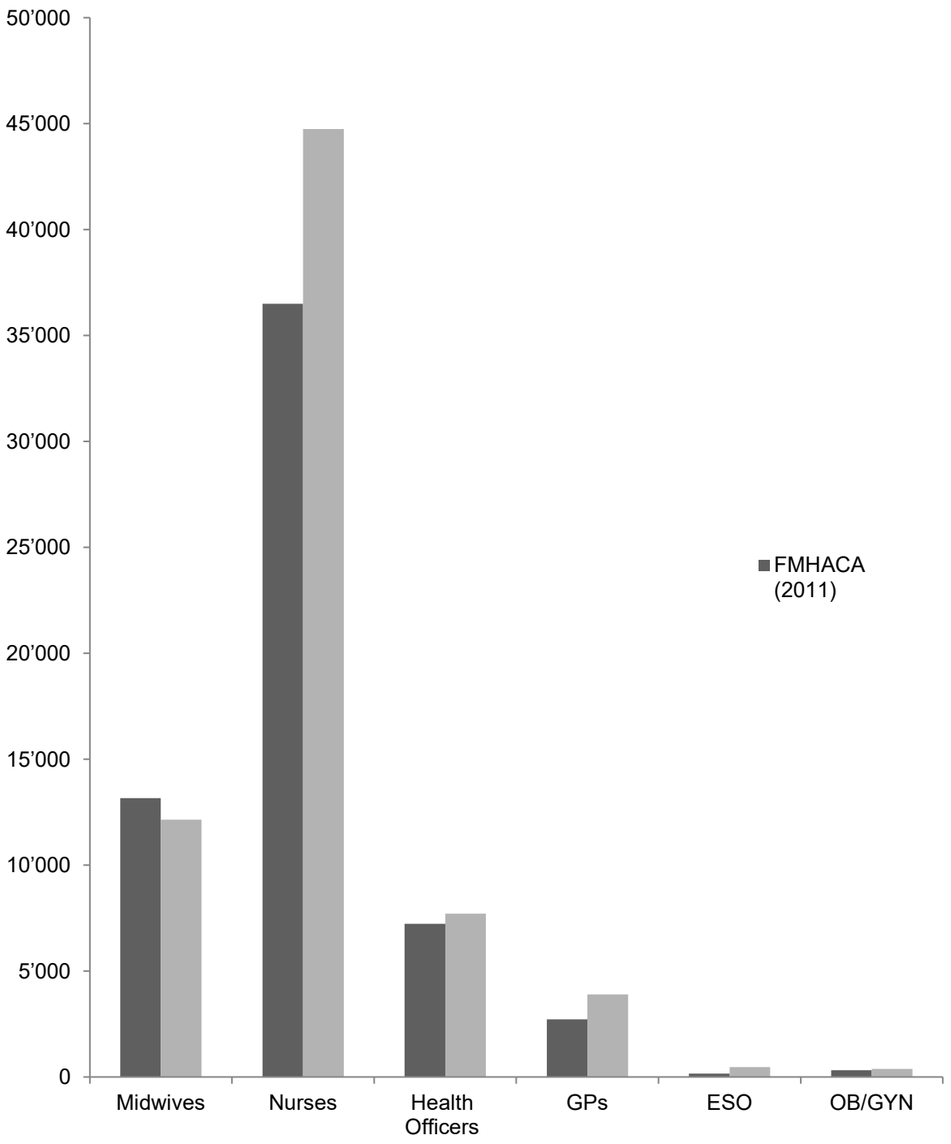

Figure 1. Comparison between FMHACA human resource minimum requirement and the observed number of human resources in facilities, Ethiopia, EmONC 2016.

Conclusion

This study suggests that national numerical standards are being met but key international standards are not, especially for physicians, nurses and midwives. Although a large proportion of higher-level cadres had training on Emergency Obstetric and Newborn Care, the mid-level health workers who attend most births had much lower levels of specialized training. Policies aimed at keeping health workers in the public sector must be implemented in order to prevent more health professionals from clustering in big cities and private facilities.

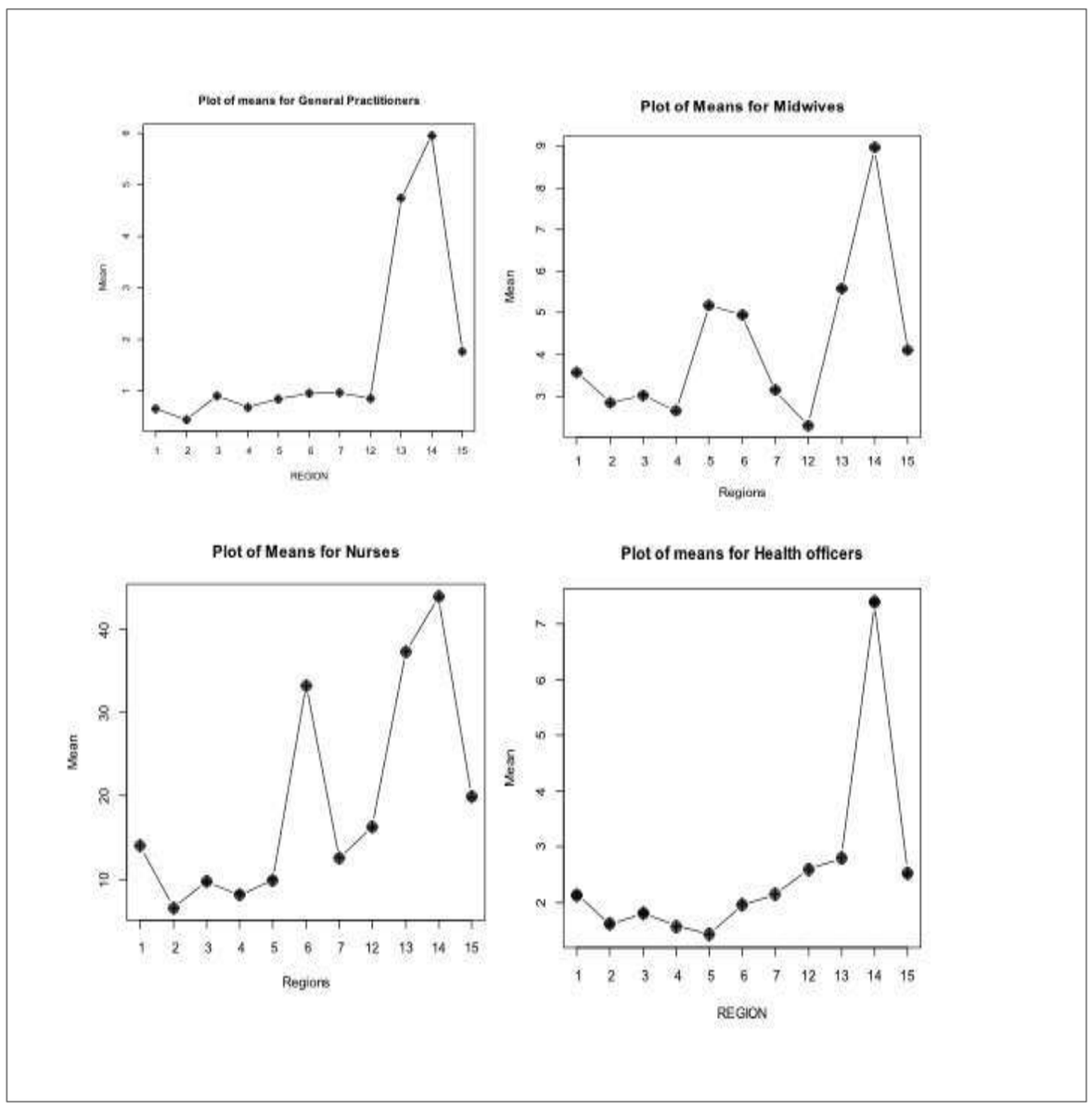

Figure 2. Plot of means for general practitioners , midwives, nurses, and health officers by region.

	Total Number of staff	Percent trained in BEmONC	Percent trained in CEmONC	Percent trained for NICU for facilities with separat e room
National	88,440	12%	2%	2%
Health professionals				
General practitioners	3,903	5%	4%	6%
Obstetrician/Gynecologists	382	52%	57%	40%
General Surgeons	347	14%	17%	16%
Pediatricians	246	14%	13%	29%
Neonatologists	17	12%	12%	21%
Emergency Surgical Officers	476	23%	38%	18%
Nurses	44,740	3%	1%	3%
Midwives	12,153	57%	3%	13%
Health Officers	7,712	5%	1%	2%
Managing Authority				
Public/governme nt	8,3143	10%	1%	4%
Private-for-profit	3,654	13%	11%	14%
Private-not-for-profit	1,643	10%	3%	5%

Table 1. This is an example of a simple table. Not much going on here, move along.

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