Abstract Book

Ninth National Summit of Health and Population Scientists in Nepal

11-12 April 2023

Research for Health: Translating Evidences and Innovation into Actions

11-12 April 2023

Kathmandu, Nepal

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Welcome Letter

Dear Summit Delegates

Nepal Health Research Council (NHRC) together with the Steering Committee, Advisory Committee, Scientific Committee and Organzing Committeewarmly in the Ninth National Summit of Health and Population Scientists in Nepal, which is part of their ongoing efforts to promote a research culture in the country. The primary goal of this summit is to provide opportunity to researchers and academicians a forum to communicate recent and pertinent health evidence as well as for policymakers to interact with them to discover such evidences. In addition, the summit will provide a platform for a diverse range of stakeholders to explore novel ways to apply research findings to improve the wellbeing of the Nepalese people. The theme of the summit is "Research for Health: Translating Evidence and Innovation into Actions"

Research for health plays a crucial role in improving the wellbeing of populations around the world including Nepal's. The process of translating evidence and innovation into action is essential in order to ensure that research findings can be applied to improve health outcomes. This requires collaboration between researchers, policymakers, healthcare providers, and communities to ensure that research is relevant, actionable, and effective. Through partnerships, investments, and a commitment to evidence-based approaches, we can continue to advance our understanding of health issues and develop strategies that can lead to better health outcomes for all. Ultimately, the goal of research for health is to translate evidence and innovation into action, in order to improve the health and wellbeing of communities all over Nepal.

During the course of the summit, various sessions such as, plenary sessions, panel discussion and parallel sessions will be held. These sessions will focus on discussing the available evidence on national health priorities through oral and poster presentations of selected abstracts, as well as invited presentations. The aim of the summit is to generate evidence that will provide insight into the need for quality research in the country within the context of research for health. It is expected that the summit will make a significant contribution towards achieving this goal.

As the summit is expected to have participants from various sectors including academia, research institutes, government, NGO/INGOs, and health sector developmental partners, it is believed that the summit will facilitate the creation of lasting partnerships for innovation in research and policy-making in Nepal. The organizers express their gratitude to all those who have supported the summit, including researchers, policymakers, external development partners, and related stakeholders. We also look forward to the active engagement of all participants in the summit. Thank you.

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Table of Contents

PLENARY SESSION

PLENARY SESSION I: HEALTH SYSTEM AND POLICY

Inequities in health service coverage and outcomes in Nepal

Sushil Chandra Baral [1]

[1] HERD International

Access to adequate healthcare is a major public health challenge in many low- and middle-income countries, including Nepal. Despite efforts to improve healthcare services and outcomes, significant access and coverage discrepancies persist, particularly for poor and disadvantaged populations.

It is necessary to monitor health inequalities to address these challenges. It assists in the identification of disadvantaged populations and the direction that policies, actions, and practices should aim at for attaining healthcare equity. Monitoring and addressing health inequalities, on the other hand, need access to disaggregated data that consider the intersectionality of poverty, place of residence (urban/rural), gender, and other factors in Nepalese context.

During this session, the presenter will share findings on inequities in service coverage and outcome based on Nepal Demographic and Health Survey 2016 and 2022, Nepal Health Facility Survey 2015 and 2021, Multiple Indicators Cluster Survey 2019, and data from Health Management Information System.

The presentation will also provide insights into potential tailored interventions for increasing health service coverage in current federal structure of Nepal. It will also emphasize on initiatives to improve service quality and reduce gaps in access to high-quality healthcare in Nepal.

Overall, this session will give policymakers, healthcare providers, and other stakeholders with actionable suggestions for closing gaps in access to quality healthcare and improving health outcomes for all Nepalese. It highlights the need of addressing health inequalities in Nepal in order to achieve Universal Health Coverage and promote health equity.

Health Information Systems: Success, Lessons, and Improvisation in Nepal

Mr. Anil Thapa[1], Mr. Bishnu Prasad Dulal[2], Mr. Harsha Raj Dahal[3]

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Background

A well-functioning routine health information system is crucial for providing information to inform evidence-based policies and improve health services. This study aims to explore the successful approaches, lessons learned during improvement, and areas requiring further improvement to enhance the health information system of Nepal. The ultimate goal is to move towards a well-functioning health information system that supports the effective delivery of healthcare services.

Method

To conduct this study, we gathered data from the documentation of existing information systems in Nepal, including HMIS, LMIS, HIIS, as well as data from current functional health information systems. We analyzed the data thematically to identify key issues and measured the performance of the systems using performance indicators.

Results

The study found that HMIS and LMIS are key data generating systems in Nepal for the routine health sectors information, covering over 93% of health facilities of the total 10500 listed health facilities. On-time reporting of aggregated data improved from 21% to 76% in six years. HMIS has expanded its coverage by adding new tools and preparing a strong digital system. LMIS has improved its coverage and reporting frequency. However, some information systems are not

functional, and there is a need for interoperability to facilitate aggregated analysis for decision-making.

Conclusion

The study concludes that non-functional HIS should be improved to have basic characteristics for interoperability and provide comprehensive evidence for evidence-based policy and program improvement for better health service. It highlights the need to incorporate methods, techniques, and competencies to support dynamic improvisation in line with statistics from population-based surveys, census, and vital registration systems. Overall, the study suggests that Nepal's HIS has made significant progress, but there is still room for improvement.

Keywords

Information, Health, System

Health Policy and System Research for Strengthening Health System in Nepal

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Health Policy and System Research (HPSR) is a multidisciplinary field that investigates how health policies, health systems, and health programs can be designed, implemented, and evaluated to enhance health and health equity. HPSR plays a critical role in informing evidence-based decision-making and policy formulation, and its focus on policy and system-level analysis, stakeholder engagement, and evidence-based solutions makes it an essential component of strengthening health systems. In Nepal, where significant health system challenges persist as a low-income country in South Asia, HPSR is of paramount importance to policymakers, researchers, and other stakeholders.

This presentation discusses the role of HPSR in strengthening the health system in Nepal. It provides an overview of HPSR and its significance in informing evidence-based decision-making, facilitating the translation of research findings into policy and practice, and promoting health

system strengthening. The presentation highlights the scope, features, and policy environment for HPSR in Nepal. Additionally, the presentation discusses the WHO Alliance for Health Policy and Systems Research, its objectives, and its significance in the Nepalese context. The presentation also outlines the key areas of focus for HPSR in Nepal, including health system governance, health financing, service delivery, health workforce, and health information systems.

Finally, the presentation identifies gaps and challenges that exist for HPSR at the individual, organizational, and system levels, such as limited understanding of HPSR, weak coordination among agencies, and inadequate technical capacity. By addressing these challenges, stakeholders can advance HPSR in Nepal, leading to stronger and more effective health systems that improve health outcomes for all. It concludes by emphasizing on the importance of continued investment in HPSR in Nepal to achieve SDGs and promote health equity.

PARALLEL SESSION

PARALLEL SESSION IA: CLINCAL TRIALS AND BIOETHICS

1.1.1 Ethics in Clinical Research in LMICs: Foundations and Current Issues

Namita Ghimire, Diptesh Aryal

Background

Clinical research is a critical component of modern medicine, providing the scientific evidence necessary to develop new treatments and interventions that can improve public health. However, ethical concerns in clinical research have been a longstanding issue, particularly in low- and middle-income countries (LMICs), where the regulatory environment is often less developed and where the risks of exploitation and harm to research participants may be higher.

In LMICs, ethical challenges in clinical research are particularly acute due to factors such as inadequate healthcare infrastructure, limited financial resources, low levels of education and health literacy, and cultural differences. As a result, ethical considerations in clinical research in LMICs require careful attention to ensure that the rights, dignity, and welfare of research participants are protected.

Some of the key ethical concerns in LMIC clinical research include inadequate informed consent procedures, exploitation of vulnerable populations, lack of community engagement and involvement, inadequate regulation and oversight, and inadequate access to post-trial benefits. These concerns can lead to significant harm to research participants and can undermine the credibility of clinical research in LMICs.

Overall, ethical conduct in clinical research in LMICs is critical for ensuring the protection of research participants and the credibility of scientific research. Addressing ethical concerns requires a concerted effort from researchers, sponsors, regulatory bodies, and the broader community to promote the highest standards of ethics and integrity in clinical research.

Objectives

1. To discuss the foundations of ethics in clinical research

2. To highlight the current ethical issues in clinical research, especially in low and middle-income countries

3. To identify strategies for addressing ethical issues in clinical research in low and middle-income countries

4. To promote ethical conduct in clinical research and protect the rights and welfare of research participants

Discussion points

1. What are the key ethical principles that guide clinical research, and why are they important?

2. What are the current ethical issues in clinical research, especially in low and middle-income countries?

3. What are the responsibilities of researchers, sponsors, and regulatory bodies in ensuring that ethical standards are maintained during clinical research?

4. What are the challenges in obtaining informed consent in low and middle-income countries, and how can they be addressed?

5. How can the ethical review process be strengthened in low and middle-income countries?

6. How can the principles of distributive justice be applied in research during public health emergencies, especially in low-income and marginalized communities?

7. How can patient advocacy and community engagement improve ethical conduct in clinical research?

8. What steps can be taken to ensure that clinical trials involving vulnerable populations, such as children, pregnant women, LGBTQ community and individuals with cognitive impairments, are conducted ethically and with the utmost care to protect their rights and welfare?

9. How can ethical considerations be integrated into study design, implementation, and dissemination of research findings? **And Post-Trial Arrangement?**

10. What are some best practices for ethical conduct in clinical research, and how can they be applied in low and middle-income countries?

Conclusion

The panel discussion will help to promote awareness of ethical issues in clinical research, especially in low and middle-income countries, and identify strategies for addressing these issues.

The insights gained from the discussion will inform future efforts to promote ethical conduct in clinical research and protect the rights and welfare of research participants.

PARALLEL SESSION IB: GENOMIC AND PRECISION MEDICINES

PARALLEL SESSION II: POPULATION HEALTH

1.2.1 Acceptability and feasibility of a family intervention to improve mental health and address domestic violence among young married women in Nepal

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Background

Domestic violence (DV) is a common and persistent social driver of mental health (MH) problems. Most of the interventions on domestic violence are focused only on women but this affects the vulnerability of women where they live in multigenerational household and cannot get out of the abusive relationships easily given the socio-cultural context. Therefore, we designed an intervention targeted at family (women, husband and mother-in-law) of young married women (15-24 years) to improveMH and to addressDV simultaneously.

Methodology

We enrolled 25 families and provided family intervention (MilDil and behavioral couple's therapy (BCT)) for 9 weeks for 11 hours. The MilDil intervention was provided to mother-in-law and daughter-in-law after which women and her husband received BCT. We conducted assessments at baseline, 1-, 3- and 6- month. We also conducted serial in-depth interviews with six families to gain more insights. We discuss the acceptability and feasibility of the intervention, and share preliminary results.

Results

Our preliminary analysis showed participants' reporting of 100% score on acceptability surveys. Except for one family, all participants completed the intervention, and four members from three families missed the final assessments. The percentage of women with PHQ-9>9 (primary outcome, rate of moderate depression) reduced from 46% at baseline to 13% at 6- month follow up, p<0.01. Similarly, the secondary outcome of DV measured by Indian Family Violence and Control Scale

showed decrease in total frequency of physical and sexual violence in the last month from 56 to 19, p<0.05, and increase women's control scores from 24 to 29, p<0.01. The participants expressed their satisfaction with the intervention, citing its positive impact on their family relationships. The women and mothers-in-law reported providing mutual support in household chores, including childcare. The couples shared that the intervention had improved their communication and relationship, with both parties actively listening and taking turns to speak, and even supporting each other in household activities.

Conclusion

Delivering intervention to the family to improveMH problems and address DM among young married women is acceptable and feasible in Nepal. We suggest further study to understand the mechanism of the impact.

Keywords

Domestic violence, mental health, young married women, family intervention

1.2.2 Cultural practice and policy in dementia care in Nepal

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Background

Dementia is a public health issue, which requires urgent attention. Globally people are living longer, with more people ending up living with dementia. The issue of an increased older age population with dementia brings numerous challenges in Nepal i.e. rising cost in health care, changing family dynamics and challenges for policy makers to allocate appropriate resources and services. The growing issues of dementia also increase the dependency to families and carers.

Lack of awareness, policy and stigma about in dementia cause huge problem in dementia care in Nepal.

Aim

Therefore, this study aims to explore cultural practices and policy influence dementia care in Nepal.

Methods

This study used a qualitative approach using focus group discussion (FGD) and in-depth interviews to explore the cultural practices and policy related issues in dementia care in Nepal. All together with 29 participants took part in the study. In total four FGDs, three FGDs with caregiver/family members and one with other stakeholders. Four in-depth interview which included one family care giver and three health care professionals. The interviews transcripts were analysed together using thematic analysis to generate themes or patterns of meaning within the data.

Results

The data analysis resulted in four major themes: 1. Cultural practice in dementia care; and 2. Impact of policy in dementia care, 3. Service provision, 4. Education and training. Cultural practices comprise from four sub-themes: (a) Perception and attitude towards dementia; (b) Misconception on dementia; (c) Traditional beliefs, (d) Stigma toward dementia. The Impact-of-policy in dementia care theme consists of two sub-themes: (a) government priorities and policy; and (b) Dementia guidelines and protocol. The service provision theme includes: (a) Lack of care facilities and (b) Dementia care practice and support. The final fourth theme, education and training encompasses (a) Lack of professional training and (b) a Paucity of education.

Conclusion

Stigma and stereotyping around dementia needs addressing. Nepal needs better policies, guidelines and service provision for people living with dementia.

1.2.3 Nepal Family Cohort Study in Lumbini Cultural and Waling Municipalities: Opportunities and Challenges

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Introduction

Nepal Family Cohort Study is a multidisciplinary cohort study into the prevalence, incidence, and determinants of various diseases from childhood to adulthood in children and their parents for over two decades. Our primary focus is understanding the multiple risk factors of health conditions in children and their families, early diagnosis of diseases, and prevention and management of diseases through effective intervention.

Methods

We are recruiting 6-9-year-old children and their parents who have provided written consent to participate. The parents offer information on socio-demographics, lifestyle factors, dietary habits, occupational history, educational history, environmental conditions at home and outside, physical activities and any diseases they or their children have had since birth. They also undergo a series of measurements such as lung function, oxygen saturation, blood pressure, hand-grip strength, anthropometry, body fat percentage, muscle mass, body water content and skin-fold thickness as an indirect measure for malnutrition. We are also measuring eleven different parameters in spot urine samples semi-quantitatively and plan to collect the biological specimen in future follow-ups to conduct -omics study. The study is currently being undertaken in two regions (Terai (site one): Lumbini Cultural Municipality and Hilly (site two): Waling Municipality) and has the plan to expand to extend to other provinces of Nepal in the future.

Results

The baseline study is ongoing. So far, we have collected over 5000 participant data from sites one and two. We plan to complete the baseline data by the end of December 2023 with about 15,000 participants from the two regions.

Conclusion

The current data collection is the first step of our longitudinal study to comprehensively assess risk factors, prevent diseases, and manage health outcomes through various interventions. Our study will provide valuable information for evidence-based decision-making regarding disease prevention, management, and changing policy.

Keywords

Cohort study, Lung function, Environmental Health, Diet

1.2.4 Prostate Cancer (PCa) in Male & Breast Cancer (BCa) in Female Make Largest Cancer Pool in the World & in the EU28+EFTA

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Background

The following abstract is one of the several parts of the thesis work submitted on September 9, 2019, to the department of Radiology, CEMBIO, University Hospital Bonn and University of Bonn. The title of the thesis work is, " Scientific Evidence for shifting The Paradigm in Overall Management of Prostate Cancer: From Reactive Medicine to Predictive Diagnosis, Targeted Prevention and Personalization of Medical Services." Enough of papers related to BCa are there within the PubMed, and we felt lesser attention given to PCa. We wanted to show that both of these cancers make the largest cancer pool in the world, and this issue should be brought in the limelight.

Methods

Several of the websites to extract the information relevant for the findings are used, mainly: GLOBOCAN, ECIS, NORDCAN, SEER, Cancer Research UK, ZfKD.

Results

In the year 2018 a total of 22,309 research materials related to BCa were indexed in PubMed while PCa accounted for just 9,516. In 2018, both BCa and PCa accouts for 11% and 10% respectively for new cases of cancer, reports GLOBOCAN. In the EU28+EFTA countries PCa incidence remain highest with the rate of 160 per hundred thousand. For BCa it is 145. The other most common site specific cancers are colorectal (71) and lug (69). PCa is reported I the age group as low as 15-19 in Europe. Studies in the UK show PCa incidence increased overall in most age groups, in the age group 25-49, it has increased by more than 400%. Cancer in young adults is even more aggressive.

Conclusion

Worldwide PCa and BCa account for the largest cancer incidence; mortality from both is also on par with the leading site specific cancers. Hitherto, a lot of research and publications have been done on BCa, however, fewer efforts in relation to PCa is made. Especially when cancer incidence in the teenagers has become common. Both BCa and PCa contribute about half of all the cancers in the oncological pool.

Keywords

Breast Cancer, Oncology, Prostate Cancer

1.2.5 Utilization of Eye Health Services among Adolescents Studying in Community Schools of Bagmati Province, Nepal

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Background

A simple screening process of measuring visual acuity can detect changes in vision, which is important in identifying those at risk of vision-threatening conditions like refractive error. Trained school teachers, nurses, and students can effectively conduct school screening, record visual acuity, and refer needy students. However, not all referred students reach for eye care services. Hence, we aimed to determine the factors influencing the utilization of eye care services among adolescent students.

Methodology

This is a mixed-method sequential explanatory study conducted between October 2021 to April 2022 in 21 schools from six districts of Bagmati province. The study sample included students provided with subsidized spectacles for RE correction (visual acuity <6/12) at eye centers or their schools after school screening. Multivariate logistic regression model was applied to find the association at a 95% confidence level, and a p-value less than 0.05 was considered statistically significant. Qualitative analysis was conducted with Braun and Clarke's six-step thematic analysis technique.

Results

Among 317 students, 53.31% were aged 15-19 years, and 35.96% were female. More than half (52.68%, n=167) didn't go to a nearby eye center after referral for further evaluation after school screening. Among multiple responses for not going to eye centers, the most common reason reported by the students was the eye health facility being far (51.50%), guardians not being free to go along (26.95%), and students feeling no need for checkups (15.57%). The thematic analysis showed that perceived need, distance, cost, and family were influential in utilization of eye care. The multivariate analysis showed urban residents were more likely (AOR=4.334, p<0.001) to utilize eye care services than rural.

Conclusion

Utilisation of eye care services is poorer in rural areas with limited access to eye care facilities. The eye healthcare program should focus on providing and integrating services in such areas with primary health services.

Keywords

Eye health, Refractive error, Visual acuity, Vision screening

1.2.6 Monitoring Tobacco Smoking and Age of Smoking Initiation in Nepalese Population: Secondary Data Analysis of Results from WHO STEPS Survey with Bayesian Approach

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Background

Updated statistics on tobacco smoking is crucial for reforming national tobacco control policy and addressing related health issues. Usually, studies use classical hypothesis testing approaches (p value) to track the temporal changes in smoking habits but fail to provide strong evidence due to methodological issues. To overcome this shortcoming, we use a more reliable Bayesian Approach (BA) and compare smoking prevalence rate and the age of smoking (AOI) between the STEPS Survey.

Methods

We set up hypothesis to compare smoking prevalence rates between 2008 and 2019 as well as between 2013 and 2019, and tested them using BA. Within the Bayesian framework, we used JASP software to compute effect sizes with credible limits (CL), Bayes Factors (BF), and sequential analysis (SA). Additionally, we compared mean AOI between male and female using data from 2019 STEPS Survey.

Results

The Bayesian analysis showed significant evidence towards a declining rate of smoking prevalence in Nepal over a decade (2008 and 2019) with an effect size of 0.19(95% CL: 0.18-0.20, BF > 10). However, no change was detected in the rate of smoking prevalence during the past five years (2013 and 2019) [effect size = 0.18. (95% CL: 0.17- 0.19); BF <1/30]. The SA further revealed strong evidence towards declining smoking prevalence rate over a decade (BF0- <1) but not in the last five years (BF0-=56.59, very strong evidence). Similarly, the difference in AOI between males and females was estimated to be -0.03 (95% credible limit: -0.15-0.09), which was supported by the SA that showed strong evidence towards no difference in mean AOI between male and female (BF0- >1)

Conclusions

These findings suggest a significant decline in overall smoking prevalence rate between 2008 and 2019, with no change during the last five years. The analysis further revealed the absence of a difference in AOI between male and female.

Keywords

Smoking, Age of Initiation and Bayes Factor

1.2.6 Ensuring a fair and efficient path towards UHC: Judicious Priority Setting of Health System Interventions

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Universal health coverage (UHC), defined as "all people receiving quality health services that meet their needs without being exposed to financial hardship in paying for the services", has become an

indisputable choice for countries to realize health for all and leave no one behind (LNOB). Nepal had embraced UHC at the core of the four strategic directions of the Nepal Health Sector Strategy 2015-2020 (extended till July 2023), just before the Sustainable Development Goals (SDGs) came into force which also had UHC at its core.

However, much appears to be done to realize the universality that these guiding documents thrive for. For instance, in Nepal skilled attendant at birth coverage remains at 80% and screening for hypertension at 60% amidst the burgeoning burden of non-communicable diseases and a substantial maternal mortality ratio of 151/100,000 live births. On top of this, inequalities still prevail with the coverage of various services being low for people marginalized by geography, ethnicity, and economic status and so on.

Ensuring equitable access to health services with financial risk protection and fair improvement of population health outcomes is further challenged by scarce health care resources resulted by plateaued development assistance for health and country's inability to have a sufficient growth rate in domestic funding to close the financing gap. Priority setting of health system interventions has thus become inevitable and more so for countries like Nepal.

The process of priority setting is rigorous. Using available evidence on epidemiology, health services coverage, and globally tested methods of priority setting, countries now need to take a bold step to categorize services into priority classes. Use of relevant criteria that include cost-effectiveness, priority to the worse off, and financial risk protection helps in developing priority classes. Expansion of coverage of high-priority services to everyone and eliminating out-of-pocket payments while increasing mandatory, progressive prepayment with pooling of funds are the next steps. Additionally, priority needs to be given to the most disadvantaged groups using a targeted approach where needed to ensure fair inclusion.

During the process, one can start with enlisting all the health system interventions, followed by setting a target coverage, analysing the fiscal space based on the level of improvement of health outcomes that the country wants to achieve. It is high time that there is establishment of transparent and legitimate processes for priority setting. We recommend Nepal to start with development of

guidelines for efficient and fair priority setting and institutionalize the processwithin an appropriate unit at the MoHP tailoring the process to the federal context.

To conclude, accelerating progress towards UHC is inevitable for health maximization, fair distribution of health, and financial risk protection. And priority setting using a systematic and evidence-informed approach can be a means to achieve the same.

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1.2.7 Non-Communicable Disease Service Readiness in Nepal: A Further Analysis of Nepal Health Facility Survey- 2021

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Objective

To assess the readiness of public and private health facilities (HFs) in delivering Cardiovascular Diseases (CVDs), Diabetes Mellitus(DM), Chronic Respiratory Diseases (CRDs), and Mental Health(MH) services in Nepal.

Methods

We analyzed data on service readiness for CVDs, DM, CRDs, and MH from Nepal Health Facility Survey 2021 using Service Availability and Readiness Assessment manual of the World Health Organization. Readiness score was measured as the average availability of tracer items in percent, and facilities were considered "ready" for Non-Communicable Diseases (NCDs) management if scored ≥70 (out of 100). We performed weighted descriptive analysis, univariate and multivariable logistic regression to determine association of readiness of HFs with province, type of HFs,

ecological region, quality assurance activities, external supervision, client's opinion review, and frequency of HF meetings. The result of regression analysis is presented as odds ratio with 95% confidence interval (CI) and p-value.

Results

Of 1581 facilities offering any NCDs related services, 93.1%(95% CI: 90.9 to 94.7), 75.8%(95%CI: 72.4 to 78.8), 99.3 %(95%CI: 98.3 to 99.7) and 26.0 %(95%CI: 23.0 to 29.2) provide CVDs, DM, CRDs and MH-related services respectively. The overall readiness score for CVDs, DM, CRDs, and MH-related services were 38.1±15.4, 38.5±16.7, 32.6±14.7 and 24.0±23.1 respectively with readiness score lowest for the guidelines and staff training domain and highest for essential equipment and supplies domain. Peripheral public HFs were more likely to be ready to provide all NCDs-related services as compared to federal/provincial facilities. The HFs with external supervision in past 4 months were less likely to be ready to provide CRDs and DM related services and HFs reviewing client's opinions were more likely to be ready to provide CRDs, CVDs and DM related services.

Conclusion

Readiness of HFs to provide CVDs, DM, CRDs, and MH-related services was sub-optimal in Nepal. It is recommended to reform policy to improve service readiness for NCDs.

Keywords

health facilities; readiness; cardiovascular; diabetes; chronic respiratory disease; mental health

1.3.1 Integrating vector diversity, abundance, animal sero-prevalence and public knowledge gaps and behavioral patterns data to assess risk of Japanese encephalitis virus infection in Nepal: An inter-disciplinary One Health application

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Background

Japanese encephalitis virus (JEV) infection is common in humans and other animals in Asia. The areas suitable for paddy farming and amplifying/reservoir host farming are ecologically excellent drivers for virus transmission. The objective of this study was to use an interdisciplinary one-health approach to obtain a better understanding of the ecology and epidemiology of JEV infection in the farming communities of Nepal.

Methods

A cross-sectional study was conducted in Rupandehi district of Nepal involving 183 households with pigs, ducks, or chickens. Blood samples from 339 pigs, 288 ducks, and 209 chickens were tested for anti-JEV antibodies by indirect fluorescent antibody assay. Seroprevalence and risk factors for JEV infections were characterized for each species. A knowledge, attitude, and practice (KAP) survey was conducted in the same households. Weekly mosquito sampling in the same study district was carried out at eight different locations.

Results

Seroprevalence in pigs, ducks, and chickens was estimated to be 14.7%, 11.8%, and 6.7%, respectively. The household-farm level seroprevalence of JEV was 31.7%, 31.6%, and 12.8% for pigs, ducks, and chickens, respectively. The major risk factors for JEV infection in these animals were age, locality, household fermentation practices, farm size, and location of the farm. Depending on several aspects of knowledge, attitude, and practices, one or a combination of factors were found to be associated with preventative measures. *Culex tritaeniorhynchus* was the most common vector identified during the study period, although 16 additional *Culex* species were detected.

Conclusions

The results delineated JEV exposure in ecologically-relevant livestock hosts, abundance of vectors known to transmit JEV to humans and livestock, and sociological factors that could influence JEV transmission in Rupandehi district of Nepal. These findings support the contention that the study environment was highly conducive to virus transmission and that humans are at substantial risk of contracting JEV at a household level.

Keywords

Japanese encephalitis virus, One Health, Nepal, zoonoses

1.3.2 Assessment of Biomedical Equipment in government designated COVID-19 hospitals in Kathmandu Valley

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Background

COVID-19 has impacted the healthcare system of Nepal in a major way. The major COVID-19 hospitals in Nepal faced enormous challenges in reducing the burden of patient flow. Hence, this study is aimed to assess the biomedical equipment in government designated COVID-19 hospitals in Kathmandu valley.

Methodology

Major government hospitals that had the most patient flow at the time of COVID-19 pandemic were taken for data collection. A set of questionnaires was prepared and was disseminated to the respective representative of the designated hospitals in Kathmandu valley to assess the functional status and quantification of biomedical equipment's, the number of lives saved with the aid of biomedical instruments (ventilator, oxygen concentrator) during COVID-19 followed by identification of operational status of biomedical devices and the ways concerned human resources maintain it since the onset of pandemic in Nepal (March 2020 until September 2021).

Results

Major government hospitals were found to have experienced inadequate supply of critical biomedical equipment's during the peak period of COVID-19 in Nepal. Moreover, only few hospitals have had permanent biomedical technician and engineers in place.

Conclusion

A uniform guideline comprehending the proper distribution and management of biomedical equipment's in government hospitals seems to be of urgent need. As the study was conducted only

in 8 government designated COVID-19 hospitals in Kathmandu valley, further studies shall be carried out in order to get overall glance of biomedical equipment in hospitals of Nepal

Keywords

COVID-19, Kathmandu Valley, Biomedical Equipment

1.3.3 Application of SARIMA Model in forecasting of Long-Acting Reversible Contraceptive Methods Before, during and after the COVID 19 pandemic restrictions.

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Background

Forecasting the seasonality and trend on family planning is important for the rational allocation of health resources in the country like Nepal. In this study, we predict the new users on implant and IUCD by establishing the seasonal autoregressive integrated moving average (SARIMA) model through routine health information management system and providing insights on trend, loss, and recovery on new acceptors for implant and IUCD.

Methods

The number of beneficiaries utilizing implant and IUCD services (new acceptors) were abstracted from HMIS for study via District Health Information System 2(DHIS2) platform. The information was aggregated at provincial and national level for analysis. The Box Jenkins Auto Regressive Integrated Moving Average with seasonal adjustment (SARIMA) model was used to estimate and forecast the new additional users in LARCs.

Findings

Findings revealed that, national averages of new acceptors of Implant and IUCD had been a significant loss during the pandemic scenario at different cut off points. The bounce back of on new acceptors after COVID months has been observed. Our forecast predicts that at least 16,953 additional new users on LARCs methods will add in upcoming 11 months (July 2022 to May 2023).

Conclusion

Clear and sustained short and midterms disruptions in LARC services are evident in COVID-19 restrictions. The recovery of both the methods recovered to pre-COVID levels after the removal of restriction. These findings provide reference for relevant stakeholders to plan and formulate the improvisation of LARCs services at situational context.

Keywords

LARC, SARIMA, COVID 19 pandemic

1.3.4 Health and agricultural impact of pesticide bans in Nepal

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Background

Intentional pesticide poisoning is a major clinical and public health problem in agricultural communities in LMICs like Nepal. Eight mostly highly hazardous pesticides were banned in Nepal in 2019, monitoring of which pesticides will be used for pesticide suicides and the effects of the ban are necessary. The objective of the study is to monitor the impact of 2019 pesticide ban on pesticide suicide numbers and the agriculture yields.

Methodology

We reviewed fifteen months data (September 2021- November 2022) on all pesticide-poisoning related autopsy samples analyzed by two Nepalese toxicology laboratories (National and Central Police Forensic Science Laboratories). The pesticide responsible for suicide was identified from laboratory analysis. As this study was a follow up study done earlier (HOPE GRID 2017-2019), we used the data from the previous study for comparison. Simple descriptive analysis was done. Data on agriculture yields were collected from publications of Ministry of Agriculture and Livestock Development (July 2005 -July 2021) and were analyzed.

Results

Of 1002 fatal cases positive for pesticide poisoning reported by toxicology laboratories, there were more men (51%) than women. The most important pesticides groups identified were organophosphorus insecticides (28%). Where identified, the most common organophosphorus insecticide was dichlorvos (31%) which was 29% less than 2017-2019 study. Of phosphine gas (28%), aluminium phosphide accounted for 26% which was less than the previous study (33%). Data on individual pesticide compound was missing in 35% cases. There has been no decrease in agriculture yield after the pesticide bans between 2005- 2021.

Conclusion

Organophosphorus (OP) insecticides and aluminum phosphide were responsible for most pesticide suicides in Nepal. There has been decrease in number of deaths from dichlorvos (OP) and aluminum phosphide as compare to before ban data. Encouraging toxicology laboratories to identify the individual pesticide compound can provide improved data that can be used to guide further pesticide regulation.

1.3.5 Linking evidence to action: Using system thinking approaches to identify gaps and co-design interventions for building a resilient local health system

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Background

Federalization in Nepal has allowed devolved responsibilities and decision space at local levels, which is constrained by systemic, capacity and resource issues in the health sector, which are exacerbated by various shocks and chronic stressors to health systems. The overall aim of this study is to understand the resilient capacity of a local health system, co-design interventions to address gaps and needs, and support implementation to build a resilient local health system.

Methodology

Our study design is participatory action research using a learning site approach. Kapilvastu municipality in Lumbini Province is our learning site, involving embedded researchers working with local health systems. We used a mixed method approach as both qualitative and quantitative methods contribute to understanding health systems behaviour and complexity. We analyzed secondary quantitative data and documents. Moreover, to add value to data interpretation from health systems perspectives, we used visual methods for understanding complex health systems through 'causal loop diagrams' and 'vulnerability mapping'.

Results

We assessed resilience capacity of the health system in Kapilvastu municipality applying the Resilience Framework developed by Rebuild for Resilience consortium. We identified programmatic as well as systemic challenges that are creating stress for the local health system. Through co-design with municipality health and non-health teams, partner organizations, communities, and other stakeholders, we discussed the problems and performed root causes analysis, prioritized and determined actions for strengthening the health systems. The embeddedness and co-design encouraged meaningful participation, ownership, and accountability among stakeholders in deeply analyzing local problems and priorities and designing and implementing solutions. Ensuring equity and inclusiveness, multisectoral coordination, resources identification, transferring skills and capacity, designing need-based and evidence-based models to solve local health problems are the key areas identified for implementation.

Conclusions

Effective use of co-design facilitates building relationships with policy makers and researchers. Lessons from our study may guide policy makers, managers and researchers in navigating health systems challenges and designing models for building responsive, equitable, resilient, and sustainable health systems, in normal times and during crises.

Key words: Co-design, health system, resilience, system thinking

1.3.6 Heavy metals-bioremediation by highly radioresistant Deinococcus radiodurans isolated from industrial effluents

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Background

Deinococcus radiodurans the extremely radioresistant Gram positive bacterium and has become an organism of choice for engineering a number of strategies for bioremediation of radioactive waste.

Methodology

In the present study, Total fifteen industrial effluent samples were collected from the industrial area and the heavy metals bioremediation capabilities of *D. radiodurans* for Copper, Nickel, Cadmium, Zinc and Mercury were monitored at different concentrations and contact times.

Results

The characterization of heavy metals was observed using the Fourier Transform Infrared (FTIR) spectrophotometer, and Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES). The results of bioremediation experiment showed that *D. radiodurans* has a good ability to absorption Copper, Nickel, Cadmium, Zinc and Mercury in considering to the metals concentrations and times.

Conclusion

D. radiodurans was able to degrade the heavy metal up to 3000 ppm concentration and can be very useful for the application in the environmental bioremediation.

Keywords

Bioremediation, Heavy Metals

1.3.7 Human resources management at local level in Nepal's federalized health system

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Background

The transition of Nepal to a federal state presented an opportunity to develop a customized health service at the local level. However, this process of federalization also posed challenges in managing human resources. The objective of this study is to identify gaps, challenges, and opportunities in the management of Human Resources for Health at the local level in Nepal following the federalization**.**

Methodology

This is a qualitative exploratory study. In-depth interviews were conducted in five districts and nine municipalities across three provinces of the country with health system stakeholders at the federal level (n=16), provincial level (n=25), and local level (n=104). We analyzed data following the Health Workforce building block of the WHO's health systems framework.

Results

The themes of this study revolve around the opportunities and challenges of human resource for health (HRH) management at the local level. Local government stakeholders expressed a positive attitude towards federalization, while local health workers had mixed reactions. The newly implemented government structure allows for the easier allocation of funding to design contextualized healthcare interventions and promote inclusivity. However, higher-level government officials expressed concerns about coordination among stakeholders. The study identified opportunities such as an inclusive working environment, bottom-up planning, and increased budget for HRH, and challenges such as staff shortages, lack of capacity development, and unclear accountability at the local level.

Conclusion

Our study emphasizes that although the federalization of Nepal's health system has created significant opportunities in human resource management at the local level, it still faces several challenges. Developing a common human resource for health framework at the national level and contextualizing such a policy at the local level will aid in the management of human resources for health in Nepal's local regions.

Keywords

Federalization, health system, opportunities, challenges, Nepal

1.3.8 Cost-effectiveness of student led vision screening for municipality-based refractive error correction among school children

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Background

Uncorrected refractive error (URE) is the leading cause of visual impairment worldwide. Diagnosing and treating refractive error is one of the simplest methods to decrease impaired vision or even blindness. In healthcare, cost-effectiveness analysis seeks to aid decision-making by

considering both the costs and benefits of an intervention. Among several options, a student-led vision screening was shown to be helpful in assessing visual acuity among school children. Although this technique is helpful in diagnosing and treating children with visual impairment, we do not know how cost-effective it is.

Methodology

An exploratory cost-effectiveness study was conducted in public secondary schools in Changunarayan municipality, Bhaktapur. Student-led vision screening for refractive error correction program was designed and implemented in randomly selected 4 public secondary schools in which students were trained on visual acuity testing, screened students of grades 5–10 by trained students, and further examination and spectacles were provided in nearby eye clinics. We compared this program with four randomly chosen schools as control arm, which only had usual care. Data was collected through a record review of the program's accounting system using Pro-forma created, and family-level expenses were collected using a self-administered questionnaire provided to parents of children. Refractive error detection and correction rate, including Incremental cost effectiveness ratio (ICER), was calculated to determine its cost effectiveness. ICER below GDP per capita was considered a highly cost-effective program.

Results

The cost per child screened through this program was $12.40, in which 6.1% more children with refractive error were corrected than in usual care (11.2% vs. 5.1%). The incremental cost effectiveness ratio per child with refractive error corrected was $ 20.27, which is well below the GDP per capita ($1,164) in Nepal.

Conclusion

Student led vision screening for refractive error correction can be considered highly cost-effective in Nepal. Investing in this program could decrease visual impairment due to uncorrected refractive error among school children.

Keywords

Cost-effectiveness, refractive error, children

PARALLEL SESSION IV: BIOMEDICAL AND TRANSLATIONAL RESEARCH

1.4.1 Evaluation of Package of Essential Non-Communicable Diseases (PEN) in Nepal

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Background

Nepal government implemented the Package of Essential Non-Communicable Diseases (PEN) in 2016 and expanded to all health facilities by 2021. This study evaluated the integration of PEN service delivery in primary health care settings and identified the facilitators and barriers to PEN implementation.

Methods

We utilized a mixed method approach. We randomly selected 105 health facilities (HF) throughout Nepal and assessed PEN using standardized tool developed using WHO Service Availability and Readiness Assessment and PEN manual. We conducted key informant interviews with 23 health authorities, 47 health care providers and 35 patients. Descriptive analysis was conducted adjusting for sampling weights. The qualitative interview recordings were transcribed verbatim and coded using a codebook which was developed using an inductive and deductive approach.

Findings

About 69% of the HF had at least one PEN trained health worker and 18% of HF have PEN guideline. Regarding diagnostics, 35% offer blood sugar test; 17% offer urine ketone test; 7% offer lipid profile; 6% offer peak flow test; 4% have x-ray, 7% have spirometry and 15% have acetic acid and none offer mammogram. Regarding medicines, 48% have amlodipine, 50% have metformin, 10% have atorvastatin, 62% have furosemide, 2% have hydrochlorothiazide, 80% have salbutamol, and 1% have beclomethasone. The major facilitators of PEN implementation were: (a) social health insurance, (b) peer discussion sessions, (c) decentralization, and (d) PEN training. The major barriers of PEN implementation included: (a) inadequate medical supplies,, (b) inadequate human

resource, (c) excessive workload of existing human resources, (d) inadequate NCD recording and reporting tools, (e) double reporting, (f) low priority and insufficient budget, (g) effect of COVID-19, (h) inadequate PEN/NCD specific monitoring and supervision, (i) inadequate community engagement for PEN/NCD services and awareness, and (j) health illiteracy.

Conclusion

The study reveals several gaps in PEN service provision in all levels of health systems including inadequate budget, human resources, medicines, equipment, NCD recording and reporting forms, supervision and monitoring, and financing.

1.4.2 Empowering School Adolescents to Prevent Gender Discrimination and Sexual Harassment: Evidence from a Quasi-Experimental Study

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Background

Children are among the most vulnerable and powerless people. The incidence of sexual harassment and violence among children is alarmingly high in Nepal, starting with gender inequality from birth, and continuing through adulthood and beyond. Unequal access among gender to resources and opportunities is associated with a culture of violence against women. The societal culture of treating girls as less than equal in education, social and economic spheres fuel sexual harassment. Eclipsed by cultural norms, gender inequality and sexual violence go hand in hand. With 96% of school enrollment rate in Nepal, school adolescents provide a largest strategic target group for prevention of these twin inhumane crimes.

The study, thus, intended to empower school adolescents with knowledge, attitude, and skills to protect themselves from the twin human right violations- gender discrimination and sexual harassment.

Methodology

This quasi-experimental study was conducted by empowering both the female and male school adolescents with three experiential learning modules- gender discrimination; sexual harassment including promotion of mindfulness; and self-defense skills. A total of 3661 students from 52 selected community schools (26 interventions and 26 control) across the seven provinces of Nepal were enrolled in the study. Changes in knowledge, attitude, and skills to prevent these twin problems were measured among these school adolescents before and after 24 hours of the interventions.

Results

Pre- posttest comparison was done using percent-point difference on key-indicators related to knowledge, attitude, and skills on prevention of gender discrimination, sexual harassment, and stress coping skills. Also, mean score of that composite index was compared among both groups, and found to be statistically significant with medium to large size effect across all domains at 0.05 significance level.

Conclusion

These findings strongly suggest that empowering school adolescents can be an effective and sustainable strategy to reduce the twin human rights wrongs- gender discrimination and sexual harassment.

Keywords

empowerment, gender discrimination, sexual harassment, mindfulness, human rights, self-defense, school adolescents

1.4.3 Mapping of Abortion Stigma among girls and women of reproductive age (WRA) in Nepal

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Background

Regardless of legalization of safe abortion in 2002, the perception among abortion is mixed in different population. Findings from previous studies indicate that abortion stigma is still prevalent in the community however stigmatizing attitudes, beliefs actions are less explored. Thus, the objective of this study is to gauge the level for abortion stigma among women of reproductive age (WRA) in Nepal.

Methodology

Using Population Proportionate to Size method, 60 clusters from 7 provinces of Nepal were selected where the data collection was carried out. Total of 35 households were sampled using systematic random sampling method where a total of 2286 eligible women were interviewed. Standard stigmatizing attitudes, beliefs and actions scale (SABAS) tool was used to measure the abortion stigma for a total of 18 variables. Bivariate and multivariate analysis were carried out using SPSS. This research was approved by NHRC (436/2022 P).

Results

The total mean score of abortion stigma is 46.53 among total of 90 scores with standard deviation of 13.83. The mean for negative serotypes is 25.22 (among 40), potential contagion is 6.55 (among 15), and discrimination and exclusion is 14.76 (among 35). Among three subsets, negative serotypes is the highly stigmatized.

Multivariate analysis showed that abortion stigma is significantly increased with higher age group (p<0.001), lowest among educated women, ranging from mean score 34.58 to 54.0 (p<0.001), higher in currently married among than unmarried (p<0.001). Lower stigma was found in highest wealth quintile (p<0.05). Women in Madhesh province are highly stigmatized than other provinces (p<.05).   Similar pattern was observed in all three subsets.

Conclusion

The result of the study shows there are still abortion stigma among women and girls in Nepal. Negative serotype is higher than potential contagion and discrimination. Abortion stigma are significantly highest in poorest, illiterate, married, and elder women.

Keywords

Abortion; Stigma; SABAS tool; Women; Nepal

1.4.4 A scoping review of transforming HIV policy and strategic responses in Nepal

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Background

Nepal has transformed from low level epidemics to concentrated epidemic with rapid spread among key and vulnerable populations. The national HIV response is largely guided by National Policy on HIV and STI 2011. The objective of this paper is to review the available evidence on the gradual transformation of HIV polices and strategic responses that can better inform policy making, practice and research.

Methodology

Scoping review primarily included available evidences from a range of published policy and strategic reports of National Centre for AIDS and STD Control (NCASC) from 2011 to 2021. Supplemental articles, grey literature and best practice guidelines were also included for the review.

Results

Over times, there has been a gradual transformation in HIV policy and strategic interventions from multi-sector and mainstreaming actions to a more inclusive approach of gender and human rights based community-led responses with a major focus on differentiated services across key and vulnerable populations. The strategic interventions have adopted innovative practices of HIV self-testing and PrEP services, among others.

Conclusion

Enhancing the effectiveness of HIV policies and strategic responses through high level coordination, increased investments, adoption of innovations and scaling up of community-led responses is needed to end the HIV epidemic in the federal context.

Keywords

Concentrated epidemic, Key and vulnerable populations, Differentiated services, Community-led responses

1.4.5 Assessment of Skin Carotenoid among School Children in the Hill Region of Nepal

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Introduction

Carotenoids such as beta-carotene are the major dietary source of vitamin A. Low levels of carotenoid intake could lead to vitamin A deficiency (VAD), especially among high-risk people like children. Skin carotenoid measurement using non-invasive devices could be utilized as a rapid screening tool for adequate consumption of green leafy vegetables and fruits. This study aimed to assess skin carotenoid measurement among children in the Hill region of Nepal.

Methods

School children between 3 to 7 years old from six schools were enrolled in the study. Skin carotenoid levels were assessed using the Veggie Meter® (Longevity Link Corporation, Salt Lake City, Utah, USA). Detailed eye evaluations were conducted in subjects with low skin carotenoid scores (<150 reflectance units (RU)) and/or those with a history of night blindness.

Results

A total of 324 school children were enrolled in the study with mean age of 5.12±1.33 years. The mean skin carotenoid score was 163±71 RU, ranging from 1 to 363 RU. The skin carotenoid level was <150 RU in 46.9% of children and between 150 and 200 RU in 23.5% of children. Low skin carotenoid scores (<150 RU) were found in 17% of 3 year olds, 28.3% each of 4 and 5 year olds, 20.4% of 6 year olds, and 11.2% of 7 year olds. In multivariate analysis, age was significantly associated with low skin carotenoid scores (p=0.003; OR; 2.02; 95% CI: 1.28- 3.19). Odds of having <150 RU was 2.02 times more among the children up to five years old as compared to those over the five years of age.

Conclusion

Nearly half of the school children had low skin carotenoid scores. Skin carotenoid score was significantly lower among the lower age group. These findings emphasize the need to enhance awareness to consume plenty of green leafy vegetables and fruits in the diet.

Keywords

Skin carotenoid, vitamin A, children, Veggie Meter®, Nepal

1.4.6 Opportunities and challenges in the adoption of a nationally supported digital system for scale- up of community health support program in Nepal

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Background

Dhulikhel Hospital (DH), with technical assistance from Possible, is implementing the Community Health Support Program (CHSP) in Dolakha, aligning with World Health organization (WHO) to optimize the role of community health workers (CHWs). The government endorsed National Guideline on Community-Health-Programs in an effort to scale-up digitally enabled community programs, which supports open source community health information systems such as Community Health Toolkit (CHT). CHSP aimed to align with the GoN's (Government of Nepal) effort by transferring more than 33,000 households and 100,000 individuals from the private system to CHT. This paper describes the opportunities and challenges that CHSP faced in adopting the CHT.

Methodology

DH and SunyaEk migrated the data to CHT platform, and are operationalizing to CHSP. The entire process involved team engagement, capacity building, consensus-based data migration, multi-level quality assurance and constant troubleshooting. Observation/discussion notes and the formal/informal interaction with the users (CHWs) team during the process were documented. Opportunities and Challenges are drawn from the desk review of these documents for this paper.

Results

Adopting the CHT system provided a cross-learning platform between different professionals. Multi-phased capacity enhancement, on-site visit, regular updates calls for troubleshooting, user-friendly features, the strong hold of Program team on original design were some of the factors that facilitated in the adoption. Despite this, resistance to change and the fundamental differences between architectural design, made it difficult for program team to fully accept the CHT in the early days. Nonetheless, communication gap among the team caused by non-synchronization of IT and programming languages, interrupted communication due to rugged geographical distribution and frequently disrupting technical facilities in the work area posed as the barriers for adoption.

Conclusion

Transitioning in a matured program like CHSP comes with lot of the factors that support as well as hinder in adoption. Yet close process review with regular cause analysis and combined decision making could enable the eventual integration and adoption.

Keywords

Digital Health, Community Health Programs

1.4.7 Stigma, depression and quality of life of people undergoing tuberculosis treatment in Nepal: a longitudinal, prospective cohort study

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Background

Stigma and depression faced by people with tuberculosis (PTB) challenges TB treatment adherence, reduce cure rates, and impede progress toward achieving End TB Strategy goals. We assessed stigma, depression, and quality of life (QoL) among PTB in Nepal.

Methodology

Between August 2018 and May 2019, we prospectively recruited PTB in four districts of Nepal. We descriptively evaluated stigma, depression and quality of life longitudinally during the intensive (8-13 weeks; baseline) and continuation phases (24-28 weeks; follow-up) of TB treatment. Stigma was assessed using a locally-adapted Van Rie Stigma scale, scored from 0 (no stigma) to 30 (highest levels of stigma). Depression was measured using a locally-adapted and validated Patient Health Questionnaire (PHQ-9). We assessed QoL using EQ-5D-5L and self-reported health-rating (0, worst possible health, to 100, best possible health).

Results

Participants included 221 adults with drug-sensitive pulmonary TB. The majority (147/221, 66%) were male, mean age was 48 years, and 119/221 (54%) had no formal education. Mean stigma scores were 11.6(6.5) at baseline and 11.5(6.5) at follow-up. "People with TB fear telling people outside of their household about their diagnosis" was the Van Rie scale statement with which most participants agreed at baseline (114/221, 52%) and follow-up (100/221, 45%). Nearly one-third (66/221, 30%) of participants had mild to moderate probable depression at baseline and persisted at follow-up (59/221,27%). Participants' self-rated health-rating appeared to progress from 69.0 (95% confidence interval (CI), 67.3-71.3) at baseline to 80.3 (95%CI=78.4-82.0).0 at follow-up. EQ-5D-5L score was 0.92 (0.18) and 0.97(0.07) at baseline and follow-up respectively.

Conclusions

In this cohort of PTB, stigma and depression were common and remained throughout TB treatment. Self-reported QoL was low during three months of treatment but improved towards the

end of treatment. The study recommends the need for locally-appropriate psychosocial interventions to reduce stigma and improve mental health and QoL of PTB in Nepal.

Keywords

Tuberculosis, Stigma, Depression, Psychosocial interventions

1.4.8 The implementation realities of a digital antenatal care improvement intervention in Nepal: Auxiliary nurse midwives as street level bureaucrats

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Background

Nepal has seen significant improvements in maternal health service coverage, including antenatal care, with growing attention to ensuring high-quality care. The mIRA study evaluated an electronic decision support system (EDSS) to improve antenatal care quality in primary healthcare facilities in Nepal. This study aimed to understand the antenatal care context and explore how auxiliary nurse midwives (ANM) responded to the implementation of the EDSS.

Methodology

We conducted a longitudinal qualitative case study in four facilities implementing the EDSS. Data was collected between December 2021 and January 2023 and involved repeat observations, informal conversations, formal interviews, and validation workshops for participants to respond to

and reflect on findings. The data were analyzed thematically, drawing on street-level bureaucracy theory.

Results

ANMs verbalized they valued the EDSS, but this was not reflected in their use of it. ANMs adopted the EDSS primarily for recordkeeping and did not comply with care recommendations that conflicted with their usual way of working. Changes in antenatal care provision were contingent on coming from a permanent, legitimate source, which differed from the research project's EDSS implementation, which they perceived as temporary. ANMs viewed themselves as caring for well-women; their belief that quality was not a problem as they thought they were already delivering good quality care at their level, coupled with a risk-averse attitude, contributed to their tendency to refer more cases to the doctors or higher centers rather than perform the EDSS recommendations.

Conclusion

The demand of the EDSS to improve the quality of antenatal care did not fit well into ANMs' practice due to contextual factors and the reality of antenatal care organizations in these settings. Initial enthusiasm for the EDSS did not guarantee its use. Efforts to improve the quality of antenatal care need to be seen as legitimate to have the desired effect on antenatal care practice.

Keywords

Antenatal Care, Auxiliary Nurse Midwife, Street Level Bureaucracy, Electronic Decision Support System, Quality Improvement, Primary Healthcare Facilities

1.4.9 Community engagement to tackle antimicrobial resistance in Nepal- challenges and opportunities

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Background

Antimicrobial resistance (AMR) is a global threat to food sustainability and security, and socio-economic development. Public awareness on AMR is highlighted in most documents to address AMR. However, it is critically important to go beyond raising awareness and actively engage with individuals and communities for social and behavioral change to addresses the contextual drivers of AMR, taking a one health approach.

Method

HERD has been engaging with communities and stakeholders to co-create, implement and evaluate various community engagement (CE) approaches such as participatory video (PV), community dialogue approach (CDA) to address the issue of AMR. As a part of co-creation, equitable partnerships are established among relevant multisector stakeholders at all levels (federal, provincial and municipal) and the local community by meaningful engagement and coordination enabling to identify and understand the barriers, and develop and implement community led solutions in the form of films, and other outputs. The approaches are then evaluated for its feasibility, acceptability and its replicability in similar contexts.

Result

CE led to co-creation of solutions with the local community, ensuring that interventions are culturally appropriate and relevant to the local context. Involving stakeholders and the community in the process of identifying and addressing the drivers of AMR helped increase ownership to promote behavior change, reduce inappropriate antimicrobial use, and contribute to reducing the threat of AMR at the community level. However, making people understand about the complexities and intertwining of one health in the issue of AMR, limited incentives to the engagement of community and balancing power dynamics of different community members while working together, remains as some of the challenges.

Conclusion

The end result of using various methods of CE showed greater community impact, stakeholder engagement and ownership to the issue of irrational use leading to antimicrobial resistance and its prevention.

1.4.10 Translating Wound Care by Platelet-Rich Plasma (PRP): Book-Bench - Bedside.

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This is a study that discusses the evolving Regenerative care for wounds management. It develops platelet-rich plasma (PRP) in wound care over the course of a decade. The study covers the translation of PRP from bench research to its successful application at the bedside in treating a variety of complex wounds. The study highlights the benefits of PRP and its ability to improve the healing process by stimulating tissue regeneration and reducing inflammation. The author also discusses the challenges in implementing PRP treatment in wound care, such as standardization of procedures and regulations. The author has developed a protocol knowm as "Sandeeps Technique for assisted regeneration of skin" for healing of complex wounds, including breakthrough care for reversing the gangrenous changes in limbs.

A series of 500 wounds including nkn healing ulcers, diabetic ulcers, bedsores, deep infectio. have been treated. The study provides insights into the current state of PRP in wound care and the potential for future advancements in this field.

PLENARY SESSION 2

THEME: ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND CLIMATE CHANGE: URGENCY TO FOCUS ON PLANETARY HEALTH

Climate change, air pollution and health: Urgency of Planetary Health approach

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Environmental determinants of health are responsible for more than a quarter of the burden of disease globally. The proportion of environmental burden of diseases is much higher in low and middle income countries. There is a nexus between climate change, air pollution and health. Many of the sources of air pollution are also sources of greenhouse gases emissions such as Carbon dioxide. Air pollutants, such as methane and black carbon, are powerful short-lived climate pollutants that contribute to climate change and ill health. The impacts of climate change on global temperatures, extreme weather events, air quality, and infectious diseases profoundly threaten the foundation of human health and well-being. Climate change, air pollution and environmental disruption function as "threat multipliers," especially for those with noncommunicable diseases (NCDs), worsening the potential health impacts on those with underlying health conditions. At the same time, these environmental factors threaten the basic pillars of health and prevention, increasing the risk of developing chronic disease. In order to address increasing health risk, we should work for improving health our planet. Planetary health is a growing field that recognizes the complex interactions between degradation of the planet's natural systems due to anthropogenic activities and the interconnected human health impacts. Planetary health aims to address global environmental challenges to protect and promote human health in the "Anthropocene epoch". I will present how we can achieve the highest attainable standard of health, wellbeing, and equity through judicious attention to the human systems -political, economic, and social— that shape the future of humanity and the Earth's natural systems that define the safe environmental limits within which humanity can flourish.

Environmental and Occupational Health in Nepal: Initiatives, lesson learnt and way froward

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The speaker has got an opportunity and privilege to work in the field of occupational safety and health (OSH) in Nepal since the adoption of the modern concept of OSH in Nepal. It is a multidisciplinary field focused on protecting the safety, health and welfare of people engaged in work or employment and its main objective is to foster a safe work environment. The International Labour Organization and the World Health Organization both have jurisdiction over this area because it relates to both employment and health. Although occupational health is related to all of Nepal's ministries, it primarily falls under the purview of the Labor, Employment, and Social Security (MOLESS) and Ministries of Health and Population (MOHP).

The government of Nepal first enforced concepts of occupational health through its Labor Act 1992, but except for few enactments under this Act, the issues of OSH still lacked legal backup. The Labor Act, 2017, that was passed by Parliament on August 11, 2017, and the Labour Rules 2018 has brought a complete change in the employment regime in Nepal. From the health perspectives National Health Policy (2019) and Public Health Act (2019) have touched upon the workers' health and safety engaged in hazardous jobs.

The following are steps that can be taken to advance OSH practices in Nepal:

- Collaboration between the MOLESS and the MOHP on occupational health related activities.
- Establish National OHS council.
- Implementation of OHS management system and formation of OSH related National law and standards.
- Sector wise Collaboration with research/academic/ health institutions.
- Include prevention and control of occupational diseases in Health Policies.
- Introduce the concept of basic occupational health services (BOHS) in Universal Health Coverage.
- Capacity building and strengthening on Occupational Health for healthcare workers.

- Preparation of Training learning materials for the health care workers (doctors, nurses, and other health workers).
- Specialized training package for doctors and nurses.
- Etc.

Connecting the dots: addressing the environmental determinants in health

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Environmental factors like indoor and ambient air pollution, workplace exposure to hazardous products, lead exposure, unsafe drinking water, and constructed settings that limit physical activity can all have an impact on the health and wellbeing of individuals. According to the World Health Organization, these risk factors are responsible for approximately one fifth of global deaths and disability adjusted life years.

Although the health sector may not always have direct control over environmental determinants, it is crucial to discuss and develop multi-sectoral collaboration in raising awareness, developing regulatory standards, managing health hazards, and monitoring of environmental exposure and outcomes. These initiatives, which entail active coordination and intersectoral planning, should be carried out at both the policy and programmatic levels.

Presenters will discuss the burden of disease attributable to environmental determinants in Nepalese context linking them with long term changes in climatic and environmental conditions. Further, presenters will discuss about the potential strategies for addressing environmental determinants of health in federal context of Nepal where three tiers of government hold varying level of authority and control in decision making process.

PARALLEL SESSION V: RMNCAH AND NUTRITION

1.5.1 Nepal Maternal Mortality Study 2021

Kapil Prasad Timalsena, MoHP

Introduction

The Sustainable Development Goals targets to reduce the global maternal mortality ratio (MMR) to less than 70 per 100,000 live births, with no country having an MMR that exceeds twice the global average. Nepal has committed to reduce the MMR from 281 per 100,000 live births in 2006 to 116 by 2022, 99 by 2025, and 70 by 2030. This Nepal Maternal Mortality Study 2021 is the first ever joint undertaking of Ministry of Health and Population (MoHP), National Statistics Office (NSO), Nepal Health Research Council, and health sector development partners for estimating the MMR and identifying the causes of maternal deaths – during pregnancy, delivery, and postpartum periods – in Nepal. By doing so, it intends to inform evidence-based policies and programs at the federal, provincial, and local levels.

Methodology

The census enumerators had collected data on live births and deaths of women of reproductive age (WRA) in the enumerated households for the last 12 months preceding the National Population and Housing Census 2021. In the first phase, Census enumerators completed the death notification forms to identify pregnancy-related deaths, and submitted them to the census supervisor and notified the deaths to the pre-identified and trained local level health workers. In the second phase, the local level health workers visited the household of each of the deceased women, verified the information and conducted verbal autopsy for each identified pregnancy related deaths.

Results

MMR was found to be 151 per 100,000 live births in Nepal, with higher ratios in the Lumbini and Karnali provinces (207 and 172 per 100,000 live births respectively) and a lowest ratio in the Bagmati province (98 per 100,000 live births). Pregnancy-related deaths accounted for 653 deaths out of the 12,976 deaths of women in reproductive age (15-49 years). Of the 653 pregnancy-related deaths, 622 (95 percent) were classified as maternal deaths. The majority of the maternal deaths

occurred in the postpartum period (61 percent), while thirty-three percent occurred during pregnancy and six percent during delivery. Nearly half of the deaths (47 percent) were reported in the Lumbini and Madhesh provinces. One in ten maternal deaths was among adolescent mothers. The majority of the deaths (57 percent) occurred in health facilities, whereas 26 percent occurred at home. Non-obstetric problems (indirect maternal deaths) were revealed to be the main cause of maternal death (32 percent) followed by obstetric haemorrhage (26 percent). Five percent of the deaths were attributable to pregnancies with abortive outcomes. The leading causes of death during pregnancy were observed to be non-obstetric complications (40 percent), followed by direct deaths without obstetric codes (17 percent). On the other hand, more than three quarters (78 percent) of deaths during delivery were attributable to obstetric haemorrhage. For deaths during the postpartum period, nearly a third was due to obstetric haemorrhage and non- obstetric complications (31 percent each). In connection to the "Three Delays", a majority (74 percent) of the deceased women had experienced at least one type of delay, while 17 percent had experienced all three delays. The most common was the delay in seeking appropriate care (57 percent), followed by delay in receiving appropriate care (40 percent).

Conclusion

Many maternal deaths in Nepal were due to preventable causes such as haemorrhage and high blood pressure during pregnancy, but a significant number were contributed by nonobstetric complications such as intentional self-harm. This emphasized the significance of improving the quality of maternal health services in health facilities and strengthening referral mechanisms, emergency transportation, and early screening for danger signs. In addition of its potential to strengthen community-based maternal death surveillance and response in the country, the NMMS 2021 also sets a precedent for conducting nationwide censuses of maternal deaths in future censuses to estimate the MMR and identify causes of death.

1.5.2 Factors affecting Health-Seeking Behaviors among people in Nepal: Exploratory study on Institutional delivery, Routine Child Immunization and COVID-19 vaccination

Contributing Authors (On behalf of study teams)

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Background

People are influenced by various factors when they seek to make decisions concerning their health. This study aims to explore factors that act as facilitators and barriers to Institutional delivery, Routine Child Immunization and Coronavirus Disease 2019 (COVID-19).

Methods

A mixed method study was adopted in which the national data on coverage of institutional delivery, routine child immunization and COVID-19 vaccination was obtained through desk review followed by identification of study sites (local governments) having the lowest coverage of at least two indicators; institutional delivery, routine child immunization or COVID-19 vaccination for each selected sites. Focused ethnographic study design was applied. In-depth interviews (IDIs), key informant interviews (KIIs), kuragraphy and transect walk were used to collect information. Information was collected from 15 study sites and 219 interviews were conducted. Participants were selected purposively. Thematic analysis was performed using the RQDA package of R software.

Findings

Institutional delivery

There has been a change in practice, as mothers-in-law who used to deliver at home are now increasingly sending their daughters-in-law for institutional delivery. Despite positive changes, some women still deliver at home. This was found to occur especially in areas where a health facility's accessibility is challenged by difficult roads, unavailability of regular transport, and disruption of travel by landslides during the monsoon. A high cost of transportation not covered

by the government incentive is another challenge for poorer people. Further, barriers to institutional delivery include unavailability of birthing center facilities in nearby health posts; unavailability of Ultrasonography (USG) services at the entire local level; unavailability of adequate service providers, especially trained birth attendants. These factors are the main reasons why delivery happens at home or en route to the health facility.

Routine Child Immunization

Loss of vaccination cards followed by the fear of being scolded by the health worker at the vaccination site, along with the child's illness at the time of immunization were important factors observed in many areas of the country. Internal migration at the time of child's immunization and migration to multiple places for work were also found to explain children missing their immunization. In brick factories particularly, missed vaccinations were found where there was no FCHV reach and patients there did not have adequate knowledge of vaccination sites and schedules for their child. Other factors influencing children missing their routine immunization include non-availability of FCHV to publicize immunization schedules, and mental illness in parents and family members. The status of broken families and decision-making largely by males who may be busy at work and therefore give less importance to their child's immunization were also observed to hinder immunization.

COVID-19 vaccination

Personal choice was found to be the most important factor in choosing not to be vaccinated. Those who claimed themselves to be illiterate attributed their instinct for not accepting the vaccine, while those that were more educated often claimed that the vaccination is propaganda and there is no assurance about the long-term safety of a vaccine developed in foreign countries. Among people with multiple comorbidities, a fear of side effects post-vaccination made them decide to not take the vaccine. The decision of husbands who decided not to have the vaccine influenced their wives, many of whom also rejected the vaccine. Because of being pregnant, females were deprived of vaccination; however, along with the course of time, they did not give importance to vaccination and remained unvaccinated. That was also the case for people who could not get the vaccine because of the large crowds in the early days, as they too lost interest in vaccination and stayed unvaccinated. Physical disability was a factor that made the family decides on there being no need

to vaccinate the family member and, in another situation, the high transportation cost required to transport physically disabled people for vaccination also resulted in unvaccinated status.

Conclusion

Government has made great efforts in promoting institutional delivery, routine child immunization and, more recently, vaccination against COVID-19. People have also realized the importance of such services and have adopted behavior to seek health care services for the prevention of disease and promotion of health using those services. However, there are scattered cases of people who do not seek health services whose decisions were influenced by their level of awareness, cultural beliefs, and access to service centers along with issues in the quality of services provided at the health facilities and by the service providers.

1.5.3 Donor Milk Volume and Characteristics of Donors and Their Children at PMWH, a Tertiary Care Center

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Background

Human Milk Bank (HMB) at Paropakar Maternity and Women's Hospital is the first Human Milk Bank in Nepal. Characterization of donors and recipient of the first ever established HMB in Nepal can be cornerstone in generating evidences for building large pool of donor mothers and regulation in the prioritization of DHM as well as provide base for the consistent regulatory and operational procedures.

Methodology

Data from September 2022 to February 2023 were extracted from the computerized information management system of the HMB. Data included socio-demographic and clinical profiles of donor mothers and recipient.

Results

A total of 302 donors donated 212 liters of human milk over the period of 6 months whereas, the total number of recipient was 273. The donors were between the age of 20-25 years, majority were prim parous (55%) and delivered preterm (57%).Sixty-one percent of the donor mothers had their babies admitted to either SNCU or NICU. Regarding the profiles of recipient, majority had low birth weight (51.8%) born between 32-37 weeks of gestation (43.7%). Indication for prescription of DHM in neonates was preterm delivery (45.5%) and 55.2% of the mothers of neonates had delayed milk secretion. Around 58% of the neonates were given DHM for less than 3 days and around 29% received for 3-7 days. Babies born via spontaneous vaginal delivery seemed to have received DHM for more days and delayed milk secretion was also observed more in women who delivered vaginally.

Conclusion

Preliminary data from Nepal's first Human Milk Bank shows young aged mothers delivering for the first time whose babies were sick and admitted in NICU/SNCU are the sustained donors. No educational and ethnic barriers to donation observed. Major indication for consumption of DHM was prematurity. These findings can be employed in future to increase and sustain donors and regulate the prioritization for milk dispense.

Keywords

Key Words: Human Milk Bank, Donor Human Milk, Donors, Recipient

1.5.4 Newborn conditions and hospital response for Special Newborn Care Unit admitted cases in selected hospitals of Gandaki Province of Nepal

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Introduction

Despite the improvements, newborn morbidities and mortalities remain a challenge in Nepal. This study explores the situation and response strategies for newborn morbidities and mortalities in the Gandaki Province of Nepal.

Methodology

This is a hospital-based analytical study. Information on 1,357 newborns admitted at the Special Newborn Care Units (SNCU) during July 2021-June 2022 in five high-volume hospitals of Gandaki Province was collected using a structured questionnaire. Descriptive and logistic regression analyses were done using SPSS 29. Ethical approval was obtained from Nepal Health Research Council.

Results

Of the total newborns, 40% were from Janajati families, 44% were from the Kaski district, and 61% were males. The mean age of the mother was 25 years (±5 SD); the gestational age was 38 (±3SD) weeks; the birth weight was 2.82 (±0.78 SD) kilograms. Most of the newborns (96%) were born in health institutions. The average hospital stay was 5 (±5 SD) days.

Conditions related to neonatal infections (34%), neonatal jaundice (20%), and pre-term birth (20%) were major reasons for hospital admission. Injectable antibiotics (73%), intravenous fluids (53%), oxygen administration (39%), and phototherapy (36%) were the most common treatments, but only a few (3%) received kangaroo mother care. Only 6% of newborns were demised. Newborn morbidities were common among low-birth-weight babies (OR 17, CI: 8.33 -35.18) and among pre-term babies (OR 8, CI: 4.56 to 16.43); and newborn mortality was higher (OR 23, CI: 4.98 -

109.66) among low-birth-weight babies, when adjusted for sex, ethnicity, age of mother, district, birthplace, and mode of delivery.

Conclusion

The health system should target to save the lives of low-birth-weight and preterm newborns to achieve newborn mortality-related targets. Simple and life-saving interventions such as kangaroo mother care need to be promoted in hospitals to improve newborn health.

Keywords

Gandaki province, morbidities, mortality, Newborn, Unit

PARALLEL SESSION VI: PROMOTING QUALITY OF MEDICINE IN NEPAL

PARALLEL SESSION VII: EVIDENCE ON SOCIAL HEALTH PROTECTION FOR STRONG INSTITUTIONS

1.7.1 Satisfaction with National Health Insurance Program: Insights from Outpatients at Dhulikhel Hospital, Nepal

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Background

The National Health Insurance program (NHIP) was implemented in 2016 and expanded to nearly all local levels by 2022 with 375 designated healthcare facilities. Despite some studies on perceptions of the NHIP, the evidence on satisfaction with the program's services at the health facility level is limited. Therefore, this study aimed to explore the factors associated with satisfaction among insured patients in a tertiary hospital.

Methodology

We conducted face-to-face interviews with 385 NHIP-covered outpatients at Dhulikhel Hospital in September-October 2022, utilizing validated patient satisfaction questionnaires (PSQ-III) and the questionnaire to assess satisfaction with NHIP. We employed ordered logistic regression to explore factors associated with satisfaction across seven domains. Further, we applied exploratory

factor analysis to identify latent variables for satisfaction with NHIP and performed ordinary least square regressions to identify the factors associated with those variables.

Results

The domain that received the highest satisfaction rate among patients was technical quality, with 94% of patients reporting satisfaction. However, the lowest satisfaction level was observed in the financial aspect domain, with only 68.6% of patients expressing satisfaction. We found that patients' educational status, marital status, presence of a family member with chronic disease, and household income were the primary predictors of their satisfaction with hospital services under NHIP. Additionally, factors such as patients' educational status, household income, and whether they were subsidized were associated with their satisfaction levels regarding knowledge about NHIP. In contrast, satisfaction with NHIP components was influenced by ethnicity, occupation, family income, and the duration of enrollment in NHIP.

Conclusion The key stakeholders should examine the variation in patient satisfaction across different domains and design targeted interventions to address the areas where satisfaction levels are low. Additionally, there is a need to increase awareness about the National Health Insurance Program (NHIP) among individuals with low income and limited formal education.

Keywords

National Health Insurance Program, Patient satisfaction, Outpatient, Tertiary hospital, Nepal

PARALLEL SESSION VIII: NETWORKING COLLABORATION AND PARTNESHIP IN RESEARCH FOR HEALTH

1.8.1 Why is evidence synthesis centre important for Nepal? An opportunity for networking, collaboration & partnership

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UKCGE Recognised Research Supervisor

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Evidence synthesis allows researchers to combine relevant data from multiple studies and draw conclusions based on the most up-to-date evidence available. Although evidence-based health care has undergone a revolution over two decades, they take a long time, require access to expensive databases, are labour-intensive and expensive. Hence, systematic reviews often produced in high-income countries. But, not including local perspectives from low-income countries negotiates the principle of 'best evidence synthesis', e.g. critical evidence from Nepal, to help local decision-making might not be included in global reviews with a global question in mind.

Therefore, we argue that there is a need for a National Evidence Synthesis Centre under NHRC which can synthesize global, national and local research evidence that is relevant to a local context and meets demand of programme managers and policymakers at national and sub-national levels in Nepal. The Centre also must promote the use of systematic review findings to appropriate decision-makers to ensure they have the best chance of getting implemented. Regular evidence synthesis can also contribute to the tracking of progress of Sustainable Development Goals (SDGs) indicators. This national centre should work in close collaboration with national and international academics and research institutions, Federal, Provincial and Local Governments, health experts and health care providers.

There are many types of outputs that use evidence synthesis, such as policy briefs, systematic reviews, and clinical practice guidelines and so on. Finally, establishing a National Evidence Synthesis Centre would be very timely to help develop mechanisms of evidence synthesis as well as improve research communication. The first step could be a national workshop to identifying evidence gaps, then appoint independent research teams to perform evidence synthesis while experts from the global north can provide mentoring support for capacity building and help ensure the centre's sustainability.

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1.8.2 Localizing the research culture, turning evidence in to the policy and action in federal context of Nepal

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Since the country transformed in to the federal structure, majority of resources have been decentralized in to the subnational government along with its executing structure. To achieve the target of Prosperous Nepal and Happy Nepali by 2043, all the resources needed to be invested prudently by evidence and priority based planning. For that, identification of needs, priority, policy tools, resources and Institutions are required which are possible only by localizing the research culture and turning evidence in to the action. If local levels are made capable by the theme of cooperative, coordination and co-existence, it is very easier to establish research culture, generating evidence and utilizing it in policy and action to get the targeted results and goals.

Key words: Localizing, Research, evidence, policy, action, goals.

PARALLEL SESSION IX: AYURVEDA AND TRADITIONAL MEDICINE: APPROACH FOR DRUG DEVELOPMENT AND SCIENTIFIC APPLICATION FOR INDUSTRIAL RESEARCH

1.9.1 Drug Development in Ayurveda Medicine: Importance, possibility and future plans in Nepal.

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Medicinal plants are being used to treat diseases from history and are still included under various systems such as Ayurvedic, Unani, Tibetan and Siddha etc. At present, several organizations have been prioritizing the research and evaluation of herbal treatments for HIV/AIDS, Malaria, Sickle cell anemia and Diabetes Mellitus revealing good potential for herbal drugs. Nepal has the landscape where remnant high value medicinal plants: *Cordeceps sinesis, Nardostachys jatamansi, Allium wallichii Kunth, Rauvolfia serpentina, Swertia chirayita, Taxus baccata* are available. A wide variety of therapeutics for a number of diseases has been discovered through the extensive search of inhibitors of enzymes. Drug Development is one of the best techniques to evaluate the therapeutics potential of the plant extracts and fully characterized compounds to industrial products.

Stepwise procedure is important in the drug development phase of Medicinal Plants (MP's). The medicinal plants or its part, that has been used with medicinal importance as reference to the traditional medicine practitioner has to be collected with reference to Good Agriculture and Collection Practice. The extraction and subfractionation process has to be placed in the laboratory testing phase along with the in vitro enzyme inhibition assay inhibition and kinetic study of the inhibitors by plant extracts. In Vivo testing has to done to test potential and non-toxic extracts in animal models. Different phases of clinical trials with Good Clinical Practice have to be done to determine the safety and efficacy. The finalized result can be promoted with innovative biotech for the industrial research, to renovate the classical products for the high value industrial product.

There are remnant challenges in the Ayurveda Research Drug Development process in Nepal: Substantial cost/limited funding for research, disease heterogeneity & limited understandings, and limited cohort & geographic dispersion, issue in Standardization of data and measures. Along with challenges still there is opportunity for strong Commitment from the research community to provide information about complementary and alternative medicines to the scientific application in industrial research. There is high value for the development of "Ayurveda and Alternative Medicine database" to provide precise research ideas for the industrial application.

Widespread utilization of advanced technologies for R&D by the promotion of innovative approval standards and implementing trials with broader array of methodological approaches in Ayurveda Sector and joint radical new strategies for improved funding, networking, and maximizing impacts and outcomes are the recommendation for the flourishing Drug Development Process in Ayurveda and Traditional Medicine.

1.9.2 Clinical Guideline to Manage Type 2 Diabetes in Adults by Ayurvedic Practitioners.

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T2DM is a complex disorder which has major health, social and economic consequences. Its chronic hyperglycaemia is associated with macro- and micro-vascular complications and even death. The prevalence of T2DM in Nepal is high. In Nepal, Ayurveda is the dominant traditional medical system and is in use for thousands of years, especially for meeting the primary healthcare needs. The classical texts are written in Sanskrit, an ancient language.2 T2DM is one of the top diseases for which patients consult Ayurvedic practitioners, and many T2DM patients use Ayurvedic treatments, often from the beginning and exclusively and throughout their lives. Ayurveda fits their health beliefs and culture. Acceptability, satisfaction and perceived relief are usually high, especially among rural, poor, older and tribal populations. Many T2DM patients prefer not to use western medicines – to avoid the associated side-effects and costs and the mode of administration like insulin injections. Lack of availability of western medical system doctors in rural areas is another reason.5-8,10 In recognition of these facts, the Nepalese government actively

promotes Ayurveda and deploys Ayurvedic practitioners in Sites, often as the main clinical provider The principal research question to be addressed by the main cluster randomised controlled trial (RCT) is whether the introduction of a clinical guideline can improve the management of type-2 diabetes (T2DM) by Ayurvedic (traditional medical system) practitioners in Nepal as compared to usual Ayurvedic management. This is a two-arm, feasibility cluster RCT with blinded outcome assessment and integrated qualitative process evaluation will be conducted in 14 Ayurvedic Center Participants who are aged 18 years or above, new T2DM patients (i.e., treatment naïve), diagnosed by the participating Ayurvedic practitioner and able to provide written informed consent will be enrolled in the study. Each participant will be involved in the study for six months. Patient will be assessed for Glycated haemoglobin, Lipid Profile, Physiological parameters like heart rate and pulse rate, Anthropometric parameters, EuroQol-5D-5L.

PARALLEL SESSION X: INNOVATIVE APPROACH TO DIGITAL HEALTHCARE

Digital Ecosystem in National Health

Sanjeev Uprety MS(Ortho), MSC-IT HIT

Digitization of healthcare (ecosystem) is an urgency. Today is time for a Precision Medicine. Doctors will be treating a patient not a disease at genomic level. Digitalization is about data, to be more specific standardized data. Patient data and treatment at genomic level will help in providing patient centered quality care at every level of entire healthcare ecosystem.

Key Challenges in Nepal include digital illiteracy, lack of resources, inadequate infrastructure, and shortage of medical professionals.

Government of Nepal has taken steps to improve this ecosystem in recent years like National Health Insurance Program, free healthcare services to certain age groups, and development of healthcare facilities at rural areas. Government is making a policy to digitize healthcare data at every level so that our data is safe and secure and we use them firstly for the patient at public health, research and patient care (Electronic medical record(EMR) interoperability, data standardization, block chain, artificial intelligence(AI) etc.).

Despite the challenges Nepal is improving and progressing.

Key Words
Healthcare ecosystem, digitization, data, EMR, AI,

POSTER PRESENTATION

2.1.1 Clinical profile, Management and Outcomes among patients with Intestinal Obstruction admitted in a Tertiary Level Hospital

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Background
Intestinal Obstruction (IO) is one of the commonest causes of acute abdomen requiring emergency surgical admission. Not all the cases of IO require surgical intervention, however results in grave complications if not identified and managed promptly.

Methodology
This hospital based descriptive cross-sectional study was conducted from 2021 to 2022 over a period of one year. Data was collected using pre-designed proforma from hospital records (both database and manual registers) from the Department of Surgery. The collected data was coded and input using Microsoft Excel. SPSS Version 24 statistical software was used to analyze the data.

Results
The prevalence of intestinal obstruction was found to be 76 (7.6%) with male to female ratio being 0.8:1. Most of them (46.1%) belonged to the age group greater than 60 years. Subacute Intestinal Obstruction (SAIO) comprised more than half of the cases of IO 42 (55.2%) that were effectively managed conservatively. Past history of abdominal surgery was found to be a strong reason for IO

in our study. Abdominal distension (89.47%) and absolute constipation (84.21%) were the commonest clinical presentations among patients who were admitted for IO.

Conclusion

One tenth of the admitted cases were diagnosed with intestinal obstruction with the most common cause being subacute obstruction followed by adhesion and neoplasm. Majority of the cases had a past history of abdominal surgeries. Abdominal distension and absolute constipation were the commonest presenting complaints.

Keywords

Abdominal pain, intestinal obstruction, intestinal perforation, surgery

2.1.2 Prevalence and Associated Factors of Malnutrition in Under Five Children in Eastern Nepal: A Hospital Based Study

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Background

Malnutrition among children remains one of the most important causes of morbidity and mortality, particularly among developing countries. Malnutrition is not a simple problem with a single and simple solution. Multiple and hierarchically interrelated determinants are involved in causing malnutrition. This study thus aims to assess the prevalence of malnutrition and associated factors among children under five years of age in eastern Nepal.

Methodology

This is a hospital-based cross-sectional study. The enrollment occurred between Jan 2018 and Dec 2019 among children who visited a nutrition clinic in a tertiary care hospital. Ethical clearance was obtained before the study from the Institutional review board (IRB) of the study hospital. The data analyses were performed using Logistic regression and a 95% confidence interval along with a p-value. A p-value <0.05 was considered statistically significant.

Results

Of a total of 302 children were analyzed for malnutrition. Among them, the prevalence of being underweight, stunting, and wasting was 34.10, 32.45, and 17.54 % respectively. Among the different variables, the mother's age, mother's education, family size, economic status, and exclusive breastfeeding were the major contributing factors to malnutrition.

Conclusion

Malnutrition is a leading cause of child mortality in low and middle-income countries accounting for half of the cases of mortality in children under five. Our study revealed that the prevalence of being underweight, stunting, and wasting was 34.10%, 32.45%, and 17.54% respectively. Variables such as the mother's age, mother's education, family size, economic status, exclusive breastfeeding, source of drinking water, and gender were found to be statistically significant. Similar results have been found in studies conducted in Nepal as well as other similar developing countries. No interferences regarding cause were done in this study. However, the findings of this provide baseline information for further more inclusive studies in the future with larger samples.

Keywords

Malnutrition, Low Birth weight, Nutrition

2.1.3 Clinicopathological profile of colorectal carcinoma in a tertiary care center - A cross-sectional study

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Background

Colorectal cancer (CRC) is a malignant tumor that develops in the colon or rectum. It is the third most common cancer and the second leading cause of cancer-related deaths worldwide. In Nepal, the incidence of CRC is increasing, and it is projected to become the second most common cancer in the country by 2030. Despite this, there is a lack of information on the epidemiology and management of CRC in Nepal.

Methodology

We conducted a cross-sectional study in Shree Birendra Hospital with newly diagnosed CRC cases registered within a period of 2 years from January 2020-January 2022.

Result

A total of 56 patients were registered during the study period. The most common age group was over 60 years (71%). 64.3% were male and 35.7% were female. 87.5% patients consumed a mixed diet. 51.8% of cases were smokers and 55.4% consumed alcohol. 62.5% had normal BMI while 14.3% were overweight and 23.2% were underweight. 69.6% lived a sedentary lifestyle. 87.5% patients consumed a mixed diet. 60.7% drank coffee and 23.2% took vitamin D supplements. A positive family history of CRC was seen in 10.7% of patients.8.9% of cases had a history of inflammatory bowel disease. Initial presentation with rectal bleed was seen in 71.4% and 28.6% showed obstruction. The rectum (46.4%) was the most involved anatomical. 41.1% showedperipheral metastasis mainly in regional lymph node (25.0%). Histopathological examination showed adenocarcinoma (83.9%) with remaining being undifferentiated carcinoma.

Conclusion

CRC is a significant public health problem in Nepal, and its incidence is projected to increase in the coming years. The majority of cases are diagnosed in advanced stages, and the management of

the disease is challenging due to a lack of resources and trained personnel. It is essential to raise awareness and implement measures to prevent and control CRC in Nepal.

Keywords

Colorectal carcinoma, Epidemiology, Risk factor, Protective factor

2.1.4 Determinants of patient delay for seeking care among tuberculosis patients in Kaski district, Nepal

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Background

Delay in accessing care worsens the disease by increasing the likelihood of drug resistance, treatment failure, death, and community spread of drug-resistant TB strains..This study aims to assess the patient delay and associated factors among tuberculosis patients in the Kaski district.

Methodology

A cross-sectional study was conducted among randomly selected 194 tuberculosis patients registered in Directly observed treatment, short-course therapy. Further, face to face interview was conducted with Tuberculosis patients by using semi-structured interview schedule developed by WHO. Data were entered and managed in EpiData v3.1 and exported to SPSS v21 for analysis. Multivariate binary logistic regression was used to identify associated factors. P value <0.05 was considered statistically significant.

Results

The patient delay was 55.7% with mean delay time 38 days. Patients who were not enrolled in health insurance (AOR=4.41, 95% CI:1.50-12.96), diagnosed at government hospital (AOR=5.25,

95% CI (1.59-17.30) and private hospital (AOR=3.08, 95% CI:1.01-9.42) as compared to TB treatment center, have poor knowledge of TB (AOR=4.30, 95% CI; 1.69-10.93), and have perceived stigma (AOR=5.69, 95% CI:2.20-14.73) had more odds of delay in seeking care. Moreover, patient visited pharmacy/private clinic (AOR=0.36, 95% CI: 0.13-0.95) self-medicated (AOR= 0.23, 95%CI: 0.05-0.92) in after first appearance of first symptom, were less likely to delay for seeking care.

Conclusion

The patient delay was prevalent among more than a half of the participants Further, Determinants of delay included not having health insurance, being diagnosed at a government or private hospital, having poor knowledge of TB, experiencing high stigma, and delaying the first visit after TB symptoms appeared. It is essential to reduce delays to improve tuberculosis control. The study recommends increasing TB awareness among the general public and patients, strengthening the engagement of private sector and informal care providers to address this issue.

Keywords

Tuberculosis, Patient delay, Delay in seeking care, Factors associated

2.1.5 Work-life balance among medical doctors: A Study on Nepalese Medical Doctors Practicing in Teaching Hospitals of Kathmandu Valley, Nepal

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Background

Heavy workload is associated with poor work-life balance and reduced job and life satisfaction which is common among doctors resulting in negative consequences on patients' safety and increased medical errors. Scanty studies have been conducted so far to assess the work-life balance of medical doctors; thus, this study is forwarded to evaluate the level of work-life balance, job satisfaction, and intention to stay in their current position among Nepalese doctors who are working in teaching hospitals in Kathmandu valley.

Methodology

For the study, the doctors who have completed their medical degrees & currently practicing in teaching hospitals of Kathmandu valley namely TUTH, NAMS, KIST, NMC& KMC were included. The sample was landed to 437 considering a design effect of 1.5. Data was primarily collected through the self-administration of survey questionnaires. Data analysis was done using SPSS 25. Ethical clearance was taken from the IRB of IIHMR University, Jaipur, India, and NHRC from Nepal.

Results

The majority of respondents had poor work-life balance in the areas of work interfering with personal life (58.1%) and personal life interfering with work (50.3%), whereas the majority had good work-life balance in the areas of work/personal life augmentation (54.8%). A poor work-life balance was reported by more than half (57.3%) of the respondents. The results show that there is a significant association of work-life balance with career breaks/ sabbaticals (P-value = 0.021 and O.R = 0.439), maternity/ paternity leave (P-value = 0.043 and O.R = 1.740), and time off for family events (P-value = 0.010 and O.R = 0.439).

Conclusion

More than half of them had subpar work-life balance. Just around half of doctors reported being highly satisfied with their jobs and planning to stay. The ability to balance work and personal obligations was found to be significantly associated with medical practitioners' job satisfaction.

Keywords: Work-life balance, Doctors, Teaching Hospitals, Nepal

2.1.6 Prevalence of COVID-19 Breakthrough infection after Oxford-AstraZeneca Vaccine among Health-personnel at a Tertiary Care Center in Nepal

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Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection have afflicted tens of millions of people in a worldwide pandemic. COVID-19 vaccines are effective at preventing infection, serious illness, and death. But no vaccine is perfectly effective resulting in COVID-19 disease in individuals after completing all recommended doses of an FDA-authorized COVID-19 vaccine. This study was aimed to determine the prevalence of COVID-19 breakthrough infection amongst health personnel at a tertiary care center.

Methods

A simple randomized cross-sectional study was carried out for 2 months among 115 doctors and nursing staff of KIST Medical College and Teaching Hospital. Study participants had completed their vaccination against COVID-19 with two doses of *Oxford–AstraZeneca COVID-19* vaccine (COVIDSHIELD). Data was collected through a semi-structured questionnaire which included the demographic information and information of the vaccination in the first part and COVID-19 infection, clinical features and treatment required in the second part. Data entry and analysis were done using SPSS version 26.

Results

Out of 115 participants, 20 (17.39%) of the participants had breakthrough COVID-19 infection detected via RT-PCR for nasal swab. The mean duration of breakthrough infection was 177.2 +/- 169.51 days while the median was 96 days. The mean age was 28.65 +/- 5.10 years and female (75%) participants comprised of the majority. Sixteen participants (80%) had mild illness and only four (20%) had moderate illness. Fever (16, 80%) and cough (15, 75%) was the most common symptoms. Three patients however required hospital admission for oxygen therapy.

Conclusion

COVID-19 breakthrough infections have been found prevalent among health care workers even after being completely vaccinated with Oxford AstraZeneca vaccine but the severity of the disease and rate of hospitalization have been found to drastically decrease post-vaccination.

Keywords

COVID-19, Breakthrough infection, Oxford-AstraZeneca Vaccine

2.1.7 Job satisfaction among permanent healthworkers at primary level health institutions in Birgunj metropolitan city

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Background

Job satisfaction is an emotional response to a value judgment by an individual worker. Low performance, withdrawal, strikes, etc. are some actions employees take against job dissatisfaction. The objective of this study was to measure the job satisfaction of primary-level permanent health workers at Birgunj metropolitan city before and after employee adjustment and to measure the correlation of job satisfaction with some sociodemographic and work-related factors.

Methodology

All permanent health workers having at least one year of experience before and after employee adjustment were included in the study. Out of a population of 96 employees, 80 responses were collected, 5 denied participation, and 11 were absent at their workstations during four consecutive visits. Job Satisfaction Survey-I, a six-point Likert scale having 36 items by Paul E. Spector was used to measure job satisfaction. The score ranges are 36 to 108 for dissatisfaction, 144 to 216 for satisfaction, and between 108 and 144 for ambivalent. The data was collected between 29th March to 13th April 2022.

Results

26.25% of participants were found satisfied with their job, 5% were dissatisfied and 68.75% were ambivalent. The mean current satisfaction score was 133.45 ± 19.78. There was a significant difference in the mean job satisfaction score before and after employee adjustment (t=-4.139, p=<0.001). No association of current job satisfaction score was seen with age, sex, marital status, ethnicity, educational qualification, working post, work experience, alternative source of income, transportation to reach the workplace, time taken to reach the workplace, the distance between workplace and family residence and working municipality before employee adjustment was seen. There was negligible positive correlation seen between job satisfaction score and duration of lunch break (r=0.221, p=0.049).

Conclusion

The study concludes that currently only about a quarter of participants were satisfied with their job and job satisfaction has decreased after employee adjustment.

Keywords

Job satisfaction, Health workers, Employee adjustment, Birgunj, Job satisfaction of health workers

2.1.8 Postpartum Family Planning use and its associated factors among the mothers of Bheerkot Municipality, Syangja, Nepal

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Background

Globally, more than 90% of women wish to wait two years after giving birth before getting next pregnancy, but just 1 in 7 of them is utilizing contraception. The use of family planning methods soon after birth is still uncommon in Nepal because of multiple supply-side obstacles and a lack of client knowledge about postpartum family planning(PPFP). It can reduce maternal mortality by more than 30% and infant mortality by 10%. Postpartum period is the critical period which helps to reach unmet need of family planning and helps to maintain healthy child spacing. The purpose of this study is to assess the prevalence of PPFP use among postpartum mothers having child under 2 years of age and factors associated with it.

Methods

A community based cross-sectional study was conducted among 272 postpartum mothers of Bheerkot municipality, having child of 24 months. A multistage sampling technique was used to enroll the study participants. Data were collected using a semi-structured questionnaire. The Data were entered into EpiData and analyzed with SPSS. The informed consent was taken from mothers' before initiation of interview.

Results

Only 18% mothers of Bheerkot Municipality use PPFP. Among the tested variables ethnicity, husband occupation (socio-demographic variable), gravida, resumption of mensuration, resumption of sexual activity, past history of family planning use, types of pregnancy (reproductive and maternal characteristics), selection of family planning method during postnatal care visit, spousal communication and attitude level (individual level factors) of the participant were found significantly associated with the use of PPFP.

Conclusion

Low rate of PPFP use was reported from this study. Low utilization of PPFP service is a major challenge to the National Family Planning Program. This study suggested that demand generating interventions, promoting spousal communication on family planning and awareness campaigns helps to improve the knowledge and attitude of peoples toward use of PPFP.

Keywords

"Postpartum Family planning", "Postpartum Contraceptive Use", "Factor associated", "Nepal"

2.1.9 Knowledge and Perception regarding Medication Error among Nurses of private hospitals of Lalitpur, Nepal

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Background

Patient safety is the major concern in providing quality care. Medication errors have been identified the most common type of preventable errors. A medication error is one of the health issues in the health sector. This study is to assess the knowledge and perception regarding medication error among nurses.

Methodology

A quantitative cross-sectional research design was used. The study was conducted in different 5 private hospitals of Lalitpur. They were Nidaan Hospital, Pulchowk,Alka Hospital I and II, Jawalakhel,Sumeru City Hospital,Pulchowk, Sumeru Hosptial, Dhapakhel. All the nurses working in different wards of different hospitals were as a study population. Total enumerative sampling technique was used to select the sample. The sample was 302 nurses. Data analysis was done by using Statistical Package of Social Science (SPSS) software version 16. Descriptive statistical methods such as frequency, percentage, mean and standard deviation was used to assess socio-demographic variables and Inferential Statistics method such as chi-square test was used to analyze the association between knowledge and its socio-demographic characteristics.

Result

Regarding the causes of medication error, the most of respondents 244(80.8%) agreed because of unclear handwriting and 217(71.9%) agreed prescribing wrong route/dose and time. level of knowledge of medication error, most of respondents 126(41.7%) had inadequate knowledge, 101(33.4%) had adequate knowledge and 75(24.8%) had moderate knowledge on medication error. Regarding the level of perception of medication error, most of the respondents 273(90.4%) had favorable perception and 26 (8.6 %) had unfavorable perception.

Conclusion

Following the medication right, though during their training time it was taught very well in theory and practical as well. But still because of not following the administration right properly medication error may happen during administration. It would have better outcomes if hospital management sensitized the nurses by providing at least a one- day workshop to the nurses.

2.1.10 Deployment of COVID-19 Vaccines for Migrants and Refugees in Nepal

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Background

Nepal has a longstanding tradition of providing asylum for around 20,000 refugees, including those from Tibet, Bhutan and other states whereas the migrants include a large proportion of both external and internal migrants. The needs and determinants of COVID-19 vaccination uptake and coverage among refugees, migrants in regular situation (MIRS) and migrants in irregular (MIIS) is undocumented that precludes advocacy toward inclusive vaccination policies and ultimately undermines effective rollout. Therefore, the study aims to provide an estimation of COVID-19 vaccination coverage as well as produce evidence on the barriers and facilitators to vaccination among these three different groups.

Method

A mixed method approach in this study included household survey and key informant interviews among the migrants, refugees and stakeholders of Koshi, Bagmati and Gandaki province. 210 household surveys were conducted among the migrants and refugees and 10 key informant

interviews were conducted among the major stakeholders (Government and NGOs). Descriptive analyses were conducted on quantitative data; and thematic analysis for qualitative data

Result

A total of 210 participants consisting of 66 regular migrants, 43 irregular migrants and 101 refugees were included in our study. Out of them, 52.9% had received full dose, and 43.3% had received partial dose of COVID-19 vaccine. Meanwhile, 3.8% of the them were unvaccinated. The inclusive vaccination policy in Nepal has been an enabling factor for the fair access to COVID-19 vaccine among refugees and migrants. Availability of vaccine at free of cost, choice for vaccine, timely information on the vaccination, and multiple vaccination centers were found to be the facilitators for the COVID-19 vaccination. However, requirement of identity documents, misinformation regarding safety of the vaccines, fear of side effects, and language barrier constituted major barriers for vaccine uptake.

Conclusion

A strong leadership is required to ensure equitable distribution and effective coverage of COVID-19 vaccines to all citizens including refugees and migrants in Nepal.

Keywords

Immunization, Vaccines, Migrants, Refugees, COVID-19, Nepal

2.1.11 Quality of Healthcare Services Delivered by Pharmacies in Pokhara Metropolitan City

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Background

Private sectors has major role in service provision for the enhancement of healthcare worldwide. Within private sectors, pharmacies play essential roles in healthcare system by providing services like dispensing medicines, counseling patients regarding the medications and checkup. Although expanding the services through the pharmacies is one of the opportunities in health care services for both the institution and the nation but there is challenge regarding the quality of the services that needs to be explored further. Within this context this study aims to assess the quality of health care services delivered by the pharmacy.

Methodology

The study design was a cross sectional study conducted in all pharmacies of Pokhara Metropolitan City. Census method was used for data collection throughout the 33 wards of the PMC including GIS mapping. Health facility questionnaire was used for data collection tools through the electronic recording device.

Results

There were total of 353 pharmacies, out of which 333 pharmacies were registered and 284 pharmacies were located in the urban areas. Of all pharmacies, 56 percent were managed by pharmacists and 19 percent were run by non-health workers. Approximately 66 percent of the pharmacies conducted routine quality assurance activities, while 11 percent of them had system to regularly record health service data. Among the 353 pharmacies, 98.8 % of pharmacies had basic medicine, 98% of pharmacies had hypertension medicine and 92.6% of pharmacies had diabetic medicine. Most of the pharmacies, 74 percent, provided CVD services and 42 percent provided diabetic services. Besides drug dispensing, majority of pharmacies provided additional diagnostic services (78%).

Conclusion

Pharmacies are managed by non-health Background, few pharmacies are not registered and most pharmacies also provided additional health services. Pharmacies play a significant role in healthcare service provision, the quality of services offered by these pharmacies remains a concern.

2.1.12 Perception of Nursing Students Toward Clinical Learning Environment in Nepal

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Background

Nursing is practice-based discipline; clinical education is a fundamental part in Nursing education so supportive clinical learning environment (CLE) is a complex socio-cultural entity has been identified as an important encouraging component for transfer of learning.

Methods

A cross-sectional, descriptive study design was used to find out the perception of nursing students toward the clinical learning environment in Nepal. The probability, simple random sampling technique with lottery method was adopted to select 16 nursing collages belonged to 4 Universities across the country. 870 bachelor nursing students were selected with systematic sampling technique as a sample. Data were collected from 2078 Poush to 2079 Jestha by using 5 point Likert scale developed on the basis of CLE Inventory. Collected data was entered in to Epi-data; analyzed in SPPS version 16 with using descriptive & inferential statistics; presented in academic table.

Results

The overall obtained mean±SD score was 168.26±24.11, secured total score on various dimension of clinical learning environment indicated that the bachelor level of nursing students perceived

their learning environment in the range of 'positive' rather than 'negative'. Positive (32.9%), moderately positive (32.9%) and negative (34.3%) perception had found almost equal among them only 21.3% had real positive perception on CLE who achieved score 80 percentiles and above.

Conclusions

Overall perception nursing students on clinical learning environment was found positive even though none of the items represents 'excellent' score or very few students were perceived real positive clinical learning environment. Significant association was existing between level of perception and ethnicity, residence, academic year, types of hospital, supervision & guidance and duration of clinical exposure in second and third year. Periodic evaluation of CLE is seeming essential and recommended in Nursing Education which provides the insight to organize positive clinical learning environment and help to create better clinical experience or learning outcome for nursing students that facilitate to become competent professional nurses.

Keywords

Bachelor nursing students, Clinical learning environment, Perception

2.1.13 Effectiveness of SMART-COP in predicting severity of Community acquired pneumonia at Tertiary care hospital (TUTH)

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Methods

It was a prospective observational study involving the patients admitted with the primary diagnosis of CAP at observation, medical wards and ICU. Outcomes were measured as need for intensive respiratory and/or vasopressor support (IRVS), in-hospital mortality and length of stay (LOS) at

the hospital. Sensitivity, specificity, Positive predictive value (PPV), Negative predictive value (NPV), Positive likelihood ratio (PLR), Negative likelihood ratio (NLR) and area under the curve (AUC) of Receiver operating characteristic (ROC) curve of SMART-COP≥3 for the outcomes were calculated using SPSS version 20 and Medcalc program.

Results

Total of 180 patients of CAP were included in the study who were admitted to observation, medical ward and ICU. SMART-COP score≥3 had a sensitivity of 94.44% (95%CI: 72.63%-99.07%), specificity of 65.43% (95%CI: 57.57%-72.72%), PLR of 2.73, NLR of 0.08, PPV of 23.29% and NPV of 99.07% in predicting the need of IRVS. The AUC of ROC was 0.926 (95%CI: 0.846-1.000, *p-value <0.001*) with a correlation coefficient of 0.450 (*p-value <0.001*). The sensitivity, specificity, PLR, NLR, PPV, and NPV of SMART-COP≥3 in predicting in-hospital mortality were 83.33%, 60.92%, 2.13, 0.27, 6.85%, and 99.07% respectively. The AUC of the ROC curve between SMART-COP score≥3 and in-hospital mortality was 0.760 (95%CI: 0.552-0.967, *p-value 0.031*) and the correlation coefficient was 0.164 (*p-value 0.028*). There was a positive correlation between the SMART-COP score and the length of hospital stay.

Conclusion:

SMART-COP is an effective severity scoring system for predicting the severity of CAP and excluding low-risk group patients, mainly with the need for IRVS. The higher score is associated with a longer length of stay at the hospital.

Keywords

Community acquired pneumonia, severity scoring, SMART-COP, Intensive respiratory vasopressor support (IRVS), in-hospital mortality

2.1.14 Susceptibility Weighted Imaging for Detection of Thrombus in Acute Ischemic Stroke: a cross-sectional study.

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Background

SWI can help in the diagnosis of thrombus within the vessel in acute ischemic stroke (AIS) known as susceptibility vessel sign (SVS) and detection of SVS within the vessel can predict treatment modality and outcome. In this study, the purpose is to correlate the SVS on SWI with different parameters of stroke.

Methods

It was a retrospective cross-sectional study, where consecutive stroke patients with vessel occlusion on magnetic resonance angiography (MRA) were included for the study for one year. The relation of SVS on SWI with risk factors and territory involved and length of thrombus was correlated with the NIH stroke scale (NIHSS).

Results

A total of one hundred and five patients were enrolled for this study. 62% (66 out of 105) of patients showed SVS on SWI with MRA positive occlusion. A positive correlation was observed between SVS on SWI with the risk factor (p=0.003) with 86% of heart disease and 47% of hypertension had SVS. A positive correlation was also observed between the SVS on SWI with territorial occlusion (p =0.000). There was moderate positive correlation was observed between the NIHSS and thrombus length (p=0.002) with a Pearson coefficient of 0.367.

Conclusion: SWI can be useful in identifying the location of the thrombus, and NIHSS can determine the thrombus length in acute stroke. A higher incidence of SVS can be associated with risk factors and it also depends upon the site of occlusion of the vessel.

2.1.15 COVID-19 as a challenge to Nepal's newly-federalised health system: capacities, responsibilities, and mindsets

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Background

The aim of this study is to explore how Nepal's newly federalized health system responded to the COVID-19 pandemic, using this as a basis for drawing wider lessons for health policymakers in Nepal.

Methods

An exploratory qualitative method was used, involving Key Informant Interviews with 145 health system stakeholders from diverse locations and all three levels of government. The resulting transcripts were thematically analysed using NVIVO software.

Findings

We found significant differences in perceptions between the local and higher levels of government. At the local level, major themes identified included: i) a good ability to enact an initial response based on locally-available resources and capacities; ii) a consequent raising of the profile of health amongst local governments; iii) a feeling that they had not received the necessary support from higher levels of government. At the higher levels of government, we found: i) doubts about the capabilities of local governments to manage a health crisis; and ii) uncertainty about the roles and responsibilities of Provincial governments.The newly-federalized health system understandably struggled to function effectively during the pandemic. However, this was not only the result of resource deficiencies or bureaucratic weaknesses. The performance of the system was also in part undermined by the continuation of a centralized mindset, especially amongst high ranking policy makers and senior officials, which was at odds with the theoretically devolved nature of decision-making under the federalized system.

Conclusion

The study shows that, even outside the exceptional circumstances of the pandemic, there is a need for a change in mindset amongst Federal-level policymakers, from a command and control mentality towards supporting and empowering the lower levels in order to deliver a robust and functional federal health system.

Keywords

Federalization, Health System, Governance, COVID-19, Nepal

2.1.16 Morphological Variations and Morphometric Analysis of the Caudate Lobe of Liver: A Cadaveric Study

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Background

The caudate lobe is most referred area of the liver radiologically. In cirrhosis, the right lobe exhibits relatively greater shrinkage, while the caudate lobe undergoes relative enlargement as it is the only segment which receives blood independently from left and right branches of portal vein.

Methods

This was a cross-sectional descriptive study conducted on 48 formalin fixed human liver specimens available in the gross anatomy laboratory of Department of Anatomy, National Medical College, Birgunj, Nepal. The caudate lobe of liver specimens was studied for morphological variations and different measurements were taken, and the result was presented in tables.

Results

The caudate lobe showed a wide range of variations in shape. Caudate lobe was present in all 48 specimens of liver out of which, 15 specimens were rectangular (31.25%), 26 specimens were pyriform (54.16%) and 7 specimens were irregular (14.58%) respectively. In 6 liver specimens (12.50% of total number of liver specimens), there was vertical fissure that extended upwards from the lower border of caudate lobe was seen in 6 specimens (12.50%). Notch was present in 10 specimens (20.83%).

Conclusions

The caudate lobe of the liver showed a great degree of variations and the most common shape was pyriform. The ratio of the transverse diameter of the caudate lobe to that of the right lobe of the liver (CT/RL) ratio was found to be 0.14.

Keywords

Caudate lobe, Variations, Cirrhosis, Harbin index

2.1.17 Use of Glasgow Blatchford score (GBS) in predicting outcomes of adult patients presenting with upper gastrointestinal bleeding at a tertiary care center of Nepal

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Background

Upper gastrointestinal bleeding (UGIB) is one of the most common causes of hospital admissions and is associated with high mortality and morbidity. In Nepal, the mortality of patients presenting with upper gastrointestinal bleeding ranges from 6.1% to 14.3 %. This study is aimed at defining whether applying the Glasgow Blatchford score to Nepalese patients may predict the outcomes of patients presenting with upper gastrointestinal bleeding.

Methodology

Prospective observational research was conducted at Chitwan Medical College.198 patients with evidence of upper gastrointestinal bleeding were enrolled using consecutive sampling technique. Outcomes such as the need for blood transfusion, endoscopic intervention or surgery, intensive care unit admission, mortality within 30 days, and length of hospital stay were evaluated. Patients were divided into high and low-risk groups based on their composite outcomes (need for blood transfusion, endoscopic intervention or surgery, or 30-day mortality)

Results

Esophageal varices was the most frequent major endoscopic finding (31.3%), followed by duodenal ulcer (15.2%). The GBS ≥ 6 could predict blood transfusion requirement with 97.9 % sensitivity and 64.2 % specificity.The GBS ≥ 10 could predict endoscopic intervention with 77.6 % sensitivity and 67.5 % specificity.The GBS ≥ 9 could predict initial admission in intensive care units with 79 % sensitivity and 66.7 % specificity.The GBS ≥ 13 could predict 30-day mortality with 87.5 % sensitivity and 83.5 % specificity.The GBS of ≥8 could predict the high-risk groups based on the composite outcomes with 90.8 % sensitivity and 80.4 % specificity. There was a weak correlation between GBS and length of hospital stay.

Conclusion

GBS can be used as a risk stratification tool in the Nepalese population with UGIB in predicting the need for blood transfusion and 30-day mortality, however, GBS predictability for the need of endoscopic intervention and intensive care unit is lower. And, the potential cut-off of GBS can aid clinicians in the early identification of high-risk and low-risk patients.

Keywords

Glasgow Blatchford Score, GBS, Upper gastrointestinal bleeding

2.1.18 Distribution of healthcare expenses across patients' self-care behaviour to manage type 2 diabetes mellitus in Nepal: evidence from a community-based survey

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Background

Effective management of T2DM requires more healthcare resources and the trend for demand of such resources is increasing, especially in low-income countries like Nepal. However, the distribution of health care resources based on the patient's self-care behaviours is unknown. This study aimed to explore the distribution of healthcare expenses according to the self-care behaviours to manage type 2 diabetes mellitus (T2DM) in Nepal.

Methodology

This is a cross-sectional study among 481 patients with type 2 diabetes, conducted in Kavrepalanchok and Nuwakot districts of Nepal. Micro-costing and bottom-up approaches were applied to estimate the healthcare resource costs according to the patients' self-care behaviour. The relationship between total healthcare expenses and self-care behaviours was estimated by using a generalised linear model with a log-link function and 10,000 bootstrapping resampling techniques.

Results

For six months, the average healthcare resource expense for managing T2DM was US $22.87 (NRs 2701.86) per patient. The total expenses of a patient who had foot care service used was US $71.98 (NRs 8502.77), followed by glucose monitoring (US $29.55 (NRs 3490.78), physical activity (US $23.68 (NRs 2797.51), good medication adherence (US $23.59 (NRs 2787.05), dietary adherence

(US \$22.98 (NRs 2714.12) and tobacco use (US \$21.87 (NRs 2583.87). Patients who had regular foot care services had 119% lower healthcare expenses followed by regular glucose monitoring (41%) and physical activity (18%) compared to those who had an irregularity in foot care services, glucose monitoring and physical activity.

Conclusion

The healthcare expense for managing T2DM is substantial where patients' self-care behaviours are promising to reduce these expenses. This suggests the need for effective self-care interventions that might result in substantial healthcare cost savings.

Keywords

Health behaviours, healthcare expenses, patient's self-care, type 2 diabetes

2.1.19 Stress and coping among parents of preterm infants admitted to neonatal care units of central hospitals of Nepal

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Background

Hospitalization in neonatal care units (NCUs) is common among preterm infants (PTIs). Hospitalization of PTIs is distressing to parents. Stress and inadequate coping hinder parents' emotional health. Parents' emotional well-being is essential for effective parenting roles. A dearth of information is available about it in the Nepali context. Therefore, this study was conducted to explore stress and coping among parents of PTIs in NCUs.

Methodology

The descriptive phenomenological study was conducted in NCUs of three public tertiary hospitals in Kathmandu. After obtaining ethical approval, in-person in-depth interviews were conducted among the purposively selected 15 parents (10 mothers and 5 fathers) of PTIs admitted to NCUs. The obtained data were analyzed using the content analysis method.

Findings

Two themes emerged namely psychological distress and coping with the support system. Their distress was related to the condition and progress of their PTIs, infant-parent separation, altered parenting roles, and the burden of longer hospitalization. Their hospitalization burden included managerial and financial aspects. Family, friends, other parents having PTIs, and NCU staff were their support sources. Their coping mechanisms were using religious faith, sharing and learning with peer parents. Opportunities for being close with their PTIs and involvement in parenting roles were also effective coping measures.

Conclusion

Admission of PTIs to NCUs is distressing to parents. In addition, to support from family and friends, parents valued NCU staff's support for coping and expected more support, especially for infant-parent attachment and parenting roles. Improving parental support provision in NCUs considering the stressors and effective coping measures would be praiseworthy to enhance the psychological well-being of the parents.

Keywords

Stress, Coping, neonatal care units, parents of preterm infants

THEME 2: PUBLIC HEALTH EMERGENCIES

2.2.1 Evaluation of Visual Evoked Potential parameters in patients with hypothyroidism

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Objective

To evaluate and compare the pattern reversal visual evoked potential parameters (PRVEP) between hypothyroid patients and healthy controls.

Methods

We enrolled 59 female patients with a history of hypothyroidism (24 Subclinical and 10 Overt) aged 20 to 60 years and 25 healthy women of similar age (Control group). All the subjects had a complete ophthalmic examination. For VEP testing, subjects were exposed to checks subtending a visual angle of 60 and 15 minutes of arc using Roland Reti-Scan using the program Retiport 4.8.1.12 following the ISCEV clinical pattern VEP protocol.

Results

The mean P100 latency in hypothyroidism groups of pattern reversal VEP (PRVEP) was significantly delayed in both checks' sizes 60 minutes and 15 minutes (111.44 ± 7.52 and 112.93 ± 7.96, respectively) as compared with controls (106.78 ± 3.22 and 106.96 ± 3.56, respectively) ($p < 0.001$). Similarly, the mean N75-P100 amplitudes were reduced in hypothyroidism groups (9.03 ± 4.30 and 9.34 ± 4.80) compared with controls (12.73 ± 5.07 and 13.50 ± 5.43) ($P < 0.001$). Also, there was a significant co-relation between thyroid stimulating hormone and P100 latency for both check sizes 60 minutes and 15 minutes ($r = 0.475$, $p = 0.005$ and 0.479, $p = 0.005$, respectively). But there was weak co-relation between thyroid stimulating hormone and PRVEP amplitudes ($r = -0.020$, $p = 0.911$ and $r = -0.068$, $p = 0.703$, respectively).

Conclusions

In conclusion, hypothyroid patients (both Overt and Subclinical groups) have significantly delayed P100 wave latency and reduced N75-P100 amplitudes for both check sizes in comparison to the age and gender matched normal subjects. Therefore, VEP acts as a dependable marker for detection of neurological deficit in thyroid deficiency which can involve central nervous system at a much earlier stage.

Keywords

Hypothyroidism, Visual evoked potential, Thyroid stimulating hormone, Thyroxine

2.2.2 Psychological impact and coping strategies of people with cancer during COVID-19 pandemic

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Background

Patients suffering from cancer are the vulnerable population groups shown to be at a greater risk for the mortality from COVID-19. Treatment accessibility and regular follow-up was greatly affected for the cancer patient during pandemic which negatively impact the psychological wellbeing. This study aimed to assess the psychological impact and coping strategies of people with cancer during pandemic.

Methodology

A hospital based descriptive cross sectional study was conducted among 214 cancer patients in a cancer hospital, using convenience sampling technique. This was an exit interview. Data collection instruments consisted of a sets of questionnaire including personal, health and environmental data, the impact of event scale-revised [IES-R] and Brief COPE for coping strategies. The data was analyzed using independent sample t-test and ANOVA test.

Results

Among 214 participants, mean age was 51.43 years with SD 14.31. Female were 57.5%, 55.1% were from out of Kathmandu Valley, 86% were married. Regarding the diagnosis, 21% had breast cancer followed by gastro-intestinal (20.6%), cervix and uterus (13.6%). Majority (60.7%) were receiving chemotherapy. The result from inferential analysis showed that marital status (t = -2.625, p = 0.009), having mental problem (t = 2.849, p = 0.005), and mental problem in family (t = 2.445, p = 0.015) were significantly associated with the psychological impact of COVID-19 pandemic among cancer patients. Similarly, Ethnicity (F = 4.134, p = 0.017), type of treatment receiving (F = 3.434, p = 0.010), and address (t = 2.846, p = 0.000) were significant with coping score.

Conclusion

It is concluded that the married participants had less and who had mental problem had more psychological impact during COVID. Furthermore, Brahmin-Chhetri ethnic group had less but the Janajati's had positive association with coping, patients under chemotherapy and those from outside the Kathmandu valley had less score on coping. The significant findings can be considered for supporting and counseling the cancer patients during pandemics.

Keywords

Cancer, Coping strategies, COVID-19, Psychological impact

2.2.3 Diabetes mellitus and hypertension comorbidity among disadvantaged musahar people suffering from visceral leishmaniasis and their healthcare-seeking behavior in Nepal

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Background

Amidst the escalating burden of non-communicable diseases equally in the poor and people residing in rural areas, and with the purpose of studying the most vulnerable marginalized population who are also likely to contract Visceral Leishmaniasis (VL), this study aims to determine the prevalence of diabetes mellitus (DM) or hypertension (HTN) comorbidity among Musahar people suffered from VL and assess their health-seeking behavior.

Methodology

A community-based cross-sectional study was conducted in Terai districts which reported the cases of VL in the last 10 years to determine the prevalence of DM or HTN comorbidity among people with VL in Musahar community. We interviewed 53 participants using a structured questionnaire. In addition, key informant interviews and a Focused Group Discussion was conducted to identify barriers and challenges and the ways to improve their health-seeking behavior. Quantitative data was analyzed using SPSS version 20.0 and the results were presented in tables and figures. The qualitative data was analyzed using a thematic analysis approach.

Results

The findings revealed more than one-third (34%) of the participants had comorbid DM or HTN. Three-fourth (75.5%) of the participants reported accessing health care services from public health service provider. A significant association was observed (p-value <0.05) between one of the indicators of untidiness (water in room), no proper air circulation in the room, tobacco users and alcohol consumers with the comorbid condition. Qualitative findings revealed poverty, lack

of education, awareness and behavior of service providers as major barriers preventing them from seeking health care.

Conclusion: DM or HTN comorbidity was prevalent among a significant proportion of Musahar people. Awareness raising programs among such group of people may help to improve their health-seeking behavior.

Keywords

comorbidity, diabetes mellitus, hypertension, musahar, Nepal, visceral leishmaniasis.

2.2.4 Prevalence and determinants of stunting among children under-five years in Far-west Nepal

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Introduction

Stunting remains a major public health concern during the most critical stages of growth and development in early childhood. We aim to assess the prevalence of stunting among children under five years of age and identify its associated factors in Bajura district of Nepal.

Methods

We conducted a survey with 487 mothers with children under-five years of age. We used KoBocollect software installed in smartphones to collect the data. We followed WHO guidelines for the anthropometric measurement and calculated Z-score using ENA software. We used validated questionnaire for questions related to dietary diversity. We analyzed all the data from the

survey using SPSS version 24. We performed descriptive and multivariate analysis to find the factors associated with stunting.

Results

We found a high prevalence of stunting i.e., 56.7% among children under five years of age. Age, sex of the child, ethnicity, and number of children were significantly associated with the prevalence of stunting. Male children (60.7%) were more likely to be stunted compared to females (51.8%). Children from Brahmin/ Chhetri ethnic group were more likely to be stunted compared to children from Dalit and Janajati. Mothers who delivered their youngest child by Skilled Health Personnel were less likely to have their children to be stunted. Similarly, children aged 24-59 months were 2.5 times more likely to be stunted than those from 6-23 months of age. Mothers who had more than two children were more likely to be having their children at risk of stunting.

Conclusion

Stunting among children under-five years of age is alarming in far-west district of Nepal. There is a dire need for awareness and public health intervention to reduce the prevalence of stunting and improve the nutritional status of children under-five years of age in far west region of Nepal.

Keywords

Stunting, under-five children, malnutrition, Far-west Nepal

2.2.5 Methanol content in different varieties of traditionally fermented alcohol found in Jumla and health hazards associated with methanol toxicity

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Background

Alcohol poisoning cases have been reported from traditionally fermented alcoholic beverages in Nepal. The constituents of traditionally fermented alcoholic beverages are usually not quantified. Among the various forms of alcohol, methanol and ethanol has similar physiochemical properties. Due to this and cheaper cost, methanol is the most commonly and readily adulterated form of alcohol in traditionally fermented alcoholic beverages. Methanol is an important public health and environmental concern because of the selective actions of its toxic metabolite on retina, optic nerve and central nervous system along with its carcinogenetic and genotoxic effects. Methanol is toxic by two mechanisms which are direct depression of central nervous system, and by metabolization to formic acid through formaldehyde.

Methodology

A cross-sectional study in which one-liter of four different types of traditionally fermented alcoholic beverages were collected from Chandannath, Jumla from four different sites by probability random method of sampling. These samples were chhyang, local raksi, nigar and local apple cider with its main ingredient being kodo millet, apple, rice and apple respectively. The samples were sealed in an air tight bottle and then taken to Zest laboratory, Bhaktapur, Nepal. The detection and quantification for methanol was carried out using Headspace Gas Chromatography where the samples were tested injecting standard sample with known concentrations.

Results

The four different traditionally fermented alcoholic beverages were not contaminated with methanol.

Conclusion

The concentration of methanol less than 5mg/dl is regarded as maximum safe dose and any amount exceeding this can induce fatal metabolic acidosis and more commonly blindness. These severe complications can be prevented by quantifying the traditionally fermented alcoholic beverages for methanol. Also, presence of ethanol in higher concentration inhibits methanol toxicity but can instead lead to ethanol toxicity as any alcoholic beverage consumed in excess amount can lead to toxicity.

2.2.6 Epidemiology and 5-year outcome of operated cases of intracranial meningioma in a tertiary care centre in Nepal in the last 10 years

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Aim

The purpose of our study was to evaluate the demographics, clinical presentation, extent of surgery, histological findings, need for radiotherapy, sinus involvement, 5 years outcome and recurrence rates of meningioma over the past 10 years at our institution.

Methods

This is a retrospective study of 10 years, from 2010 to 2020 in the Neurosurgical department of Upendra Devkota Memorial National Institute of Neurological and Allied Sciences. Inclusion criteria consisted of patients who underwent an operation with proven histopathological findings of meningioma. Patients were followed up via telecommunication and if unavailable, the data were collected from the next of kin.

Results

A total of 239 patients were operated on over the span of 10 years. The mean age of presentation was 47 years. Female to male ratio was found to be 2.1:1. The most common presenting symptoms were headache followed by visual impairment and seizure.The most common meningioma site was convexity meningioma followed by parafalcine meningioma and sphenoid wing meningioma.The most common histopathological finding was found to be a transitional meningioma, WHO Grade I.

At the time of discharge, 212 patients (88.70%) had a good recovery, 11 patients (4.6%) had moderate disability, 6 patients (2.51%) had a severe disability, 2 patients (0.84%) were in a vegetative state and 8 patients (3.35%) had died.

Out of 239 cases, 68 patients had not yet reached 5 years post-operative period. Outcome after 5 years post-operative period, 140 patients had a good recovery, 4 patients had moderate disability, 2 patients had a severe disability, 1 patient was in a vegetative state and 24 patients (14.04%) had died.

Conclusion

Intracranial meningiomas are slow-growing extraaxial tumors, usually benign, which are most commonly located along convexities, parafalcine, parasagittal and sphenoid ridge. Common histological grading was Grade I, transitional type tumor. The 5-year outcome of the majority of operated intracranial meningioma (~82%) had good recovery (Glasgow Outcome Scale: 5).

Keywords

Meningioma, Intracranial meningioma, Glasgow Outcome Scale

2.2.7 Assessment of cardiopulmonary fitness and physical activity in health science students: a cross-sectional study

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Background

Low levels of physical activity and cardiopulmonary fitness increase the risk of chronic diseases and premature mortality. Health science students should be well-informed and motivated to adopt

healthy lifestyle. This study aimed to assess the levels of cardiopulmonary fitness and physical activity among health science students at Karnali Academy of Health Sciences, Jumla, Nepal.

Methods

A cross-sectional study was conducted among all thecertificate and undergraduate level health science students of Karnali Academy of Health Sciences, Jumla. Cardiopulmonary fitness was assessed by calculating VO_2max from the Queen's College Step Test. Physical activity levels were measured by International Physical Activity Questionnaire. Descriptive and inferential statistics were used for data analysis using GNU-PSPP software.

Results

Total 107 students (56 females) participated, age rangingfrom 18-37 years. Their median VO_2max was 40.05 (35.68 – 50.85) ml/kg/min, which is higher in males [51.69 (45.81 – 57.57)] than females [36.37 (34.90 – 38.58)] ($p<0.001$). The median weekly physical activity score was 1030 MET-minutes, with males reporting higher levels [1436 (962 – 2670)] than females [678 (414 – 1103)] ($p<0.001$). Only 20.5% of students met the WHO recommended levels of physical activity. There was significant correlation of VO_2max positively with total MET value ($p<0.001$), but negatively with body adiposity ($p<0.02$). Physical activity, sex, and BMI, but not age, were significant predictors of VO_2max, according to multiple linear regression analysis.

Conclusion

Health science students at Karnali Academy have average levels of cardiopulmonary fitness and physical activity, which is lower in females. There is a need for targeted interventions to improve the fitness of students, thatcould benefit the wider population in future. Further research is needed to explore the barriers to physical activity and the factors influencing the adoption of healthy lifestyles among health science students in this region.

Keywords

Cardiopulmonary Fitness, chronic disease, health science students, physical activity.

2.2.8 Assessment of accuracy and precision statistics in routine biochemistry autoanalyzer using internal quality control specimens in a tertiary care hospital laboratory

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Background

Accuracy and precision are two important yardsticks of a reliable analytical system in the clinical laboratory. The study was designed to determine the accuracy and precision statistics of a routine biochemistry auto-analyzer using two levels of quality control materials and to compare these statistics with the company provided values. The study also aimed to compare the month-wise variations in these statistics.

Methodology

It was a cross-sectional study conducted in the Department of Biochemistry at Birat Medical College Teaching Hospital, Nepal. Laboratory data for the months of May–July, 2021 were retrieved from the laboratory information system (LIS). The retrieved data comprised of the results of two levels of quality control specimens run routinely on Beckman Coulter AU480 biochemistry

autoanalyzer for most of the biochemical parameters. Accuracy and precision statistics were calculated as mean and coefficient of variation, respectively.

Results

In both levels of control samples, the laboratory determined accuracy statistics were greater in magnitude than the company provided ones for albumin, alkaline phosphatase, aspartate transaminase, creatinine, unsaturated iron binding capacity, urea, direct bilirubin, and amylase; the precision statistics were similarly greater in magnitude for total protein and magnesium. In monthwise comparison of laboratory determined accuracy statistics, the overall mean differences were statistically significant ($p<0.05$) for all parameters except lactate dehydrogenase and magnesium (both levels of control).

Conclusion

The laboratory determined accuracy and precision statistics showed variations from the company provided ones apart from the month-wise variation. Therefore, continuous monitoring of these values is mandatory for ensuring reliable test reports.

Key words

Accuracy; Control Specimen; Internal Quality Control; Precision

2.2.9 Irregular Antenatal Care Attendance among Pregnant Women during COVID-19 Pandemic in a Tertiary Care Centre: A Descriptive Crosssectional Study

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Background

The COVID-19 pandemic has made access to antenatal care services difficult, which could lead to serious implications for the health of mothers and fetus. There is limited study regarding its impact on pregnant women. This study aimed to find out the prevalence of irregular antenatal care attendance among pregnant women during the COVID-19 pandemic in a tertiary care centre.

Methodology

A descriptive cross-sectional study was carried out among pregnant women attending antenatal care visits at the Department of Gynaecology and Obstetrics in a tertiary care centre from 23 July 2021 to 5 September 2021. Ethical approval was granted by the Institutional Review Committee (Reference number: 077/078/67). Convenience sampling was done. Point estimate and 95% Confidence Interval were calculated.

Results

Among 196 pregnant women, 49 (25%) (18.96-31.06, 95% Confidence Interval) had irregular antenatal care attendance during the COVID-19 pandemic.

Conclusions

The prevalence of irregular antenatal care attendance during the COVID-19 pandemic was lower than other studies done in similar settings. Antenatal care is crucial to prevent maternal, fetal morbidity and mortality, hence uninterrupted antenatal care services should be provided even during crisis situation like COVID-19 pandemics.

Keywords

Antenatal care; COVID-19; pregnant women

2.2.10 Discrepancy between subjective and objective measures of obesity amongst the undergraduate medical and dental students: an institution- based cross-sectional study

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Background

Obesity has been reported to be assessed both subjectively and objectively, with varying degrees of agreement. This study was conducted to assess the discrepancy between the subjective and objective measures of obesity amongst undergraduate medical and dental students.

Methodology

A cross-sectional study was designed and conducted at College of Medical Sciences and Teaching Hospital, Nepal, from December 2019 to January 2020. First and second year undergraduate medical and dental students were first asked to report their height and weight, which were subsequently measured using standard stadiometer and weighing balance. Body mass index (BMI) was calculated from both subjective and objective height and weight, and was graded into different categories as underweight, normal, overweight and obese.

Results

Of the 181 participants, 51.4% were males. The prevalence rates of subjective and objective overweight/obesity were 24.8% and 25.4%, respectively, with the difference being –0.6% (95% CI:–9.5% to 8.4%; $p>0.05$). Likewise, the differences in prevalence rates were +4.3% (95% CI: –8.6% to 17.2%; $p>0.05$) in males and –5.7% (95% CI: –17.9% to 6.6%; $p>0.05$) in females.

Further, the differences between the mean values of subjective and objective BMI were +0.4kg/m^2 (p=0.086, overall); +0.9kg/m^2 (p=0.002, males) and –0.3kg/m^2 (p=0.122, females).

Conclusion

In the face of varying degrees of discrepancy between subjective and objective measures of obesity in overall participants as well as in both gender groups, the findings suggest a reasonable degree of acceptability of the subjective assessment.

Key words

Body mass index; Subjective Obesity; Objective Obesity; Overweight

2.2.11 Visual function in ethambutol induced optic neuropathy

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Introduction

Ethambutol is an important and widely used drug in the treatment of both tubercular and non-tubercular mycobacterial disease as it is the least toxic of the first-line antituberculosis drugs. The main disadvantage of this drug is its associated ocular toxicity, manifesting as optic neuropathy.To describe the demography, risk factors and visual function in Ethambutol induced Optic Neuropathy

Methodology

This retrospective study was conducted at B. P Koirala Lions Centre for Ophthalmic Studies where all consecutive patients with drug induced optic neuropathy secondary to ethambutol toxicity were recorded. Parameters recorded were patient demographics (age, gender and ethnicity), presenting complaints, duration, dosages, weight, visual acuity, colour vision, contrast sensitivity and visual field.

Result

There were 14 cases of ethambutol induced optic neuropathy. Mean age of patients taking ethambutol in cases of EON was 50.64± 15.8 year with mean daily dose of 18.27 ± 2.29 mg/kg and the toxicity occurred after taking ethambutol for a mean duration of 7.25± 3.45 months. Both eyes were involved in all cases with visual acuity ranging from CFCF to 6/18 in one or both eyes. Color vision, contrast sensitivity and visual field could be assessed in 50%(n=7) of cases only due to the poor presenting visual acuity in the rest. Color vision was normal in 3, nonspecific defect in 3 and tritan in 1 case. Goldman visual field showed centrocecal scotoma in 5 cases and enlarged blind spot in 2 cases. Mean contrast sensitivity was 1.59 ±0.24 and 1.52±0.33 in Right and left eye respectively.

Conclusion

Ethambutol toxicity was seen at a dosage above 15mg/kg and duration above 6 months in all cases in our study with moderate to severe visual loss. Decrease in contrast sensitivity and visual field defects were identified in all cases where the tests could be performed. Awareness may help reduce the unnecessary blindness due to drug induced optic neuropathy.

Keywords

Ethambutol induced optic neuropathy, visual function, color vision, visual field defect, optic neuropathy

2.2.12 Fear, Risk Perception, and Engagement in Preventive Behaviors for COVID-19 during Nationwide Lockdown in Nepal

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The world has faced huge negative effects from the COVID-19 pandemic between early 2020 and late 2021. Each country has implemented a range of preventive measures to minimize the risk during the COVID-19 pandemic. This study assessed the COVID-19-related fear, risk perception, and preventative behavior during the nationwide lockdown due to COVID-19 in Nepal. In a cross-sectional study, conducted in mid-2021 during the nationwide lockdown in Nepal, a total of 1484 individuals completed measures on fear of COVID-19, COVID-19 risk perception, and preventive behavior. A multiple linear regression analysis was used to identify factors associated with COVID-19 fear. The results revealed significant differences in the fear of COVID-19 in association with the perceived risk of COVID-19 and preventive behaviors. Age, risk perception, preventive behavior, and poor health status were significantly positively related to fear of COVID-19. Perceived risk and preventive behaviors uniquely predicted fear of COVID-19 over and above the effects of socio-demographic variables. Being female and unmarried were the significant factors associated with fear of COVID-19 among study respondents. Higher risk perception, poor health status, and being female were strong factors of increased fear of COVID-19. Targeted interventions are essential to integrate community-level mental health care for COVID-19 resilience.

Keywords

COVID-19; fear; health behavior; risk perception; Nepal

2.2.13 Community heroes: The impact of community health workers' on maternal and child's health in a home-to-facility health system during COVID-19 pandemic in rural Nepal

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Background

Community health workers (CHWs) are critical to achieving universal health coverage as they extend and manage care to underserved populations, enhancing people's faith in, demand for, and usage of healthcare services. Dhulikhel Hospital in collaboration with Possible institutionalized the concept of trusted, and locally trained CHWs who were aided with a mhealth platform to cater continuum of care in reproductive, maternal, neonatal, and child health in four municipalities of Dolakha. With the emergence of the COVID-19 pandemic in early 2020, when entire public health services were utterly overwhelmed, and health services for women and children were deprioritized, the role of CHWs became challenging yet crucial. This paper assessed the contribution of the locally trusted CHWs on reproductive and maternal health outcomes during COVID-19 and beyond.

Methodology

We assessed care adaptations, examining women's and children's health data between 1/2019 and 1/2022. All these data were captured in the mHealth platform as part of care delivery by the CHWs, validated, and descriptively summarized along with the challenges and lessons learned during implementation.

Results

CHWs offered remote services tirelessly delivering RMNCH services to 33,030 households including 32,928 pregnancy surveillance, 3715 antenatal care, 2546 postnatal care,11819 family planning counselling and 9015 Under 2 care even during the pandemic. The institutional birth rate which was 89.7% when COVID-19 just emerged still increased to 94.12% by 2020 end and to 95.24% by 2021 end. Although dropped considerably in 2020 both pregnancy speed and the PNC speed improved back to 38.30% and 25% respectively by the end of 2021.

Conclusion

CHWs have played a pivotal role in the continuation of critical services, an adaptation of procedures, and modification of delivery modes during the period. They have been critical and their role will be glorified, particularly in low-income nations with vulnerable health systems.

Keywords

Community health workers,Covid-19,Reproductive maternal and child health.

2.2.14 Association of Socio-economic and Demographic Factors with Incidence of COVID-19 in Nepal

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Background

The COVID-19 incidence is assumed to have significant impacts on populations with lower socio-economic Background across the world. The risk of transmission and spread of COVID-19 disease is higher at cities with higher population density. However, the number of the evidence remains limited in the South Asian region including Nepal. Therefore, the study aimed to understand the COVID-19 disease pattern across Nepal and determine whether the HDI status and population density has an impact on the incidence of disease.

Methods

Thestudy analyzed geographical distributions of cumulative incidence rate and its association with population density and HDI at district level of Nepal. The spatial autocorrelation between cumulative incidence of COVID-19 and HDI and Population Density were measured using bivariate Moran's I based on Local Indicators of Spatial Association (LISA).

Results

The study analyzed the geographic spread and variance of COVID-19 cases reported from 24 March 2020 till 30 November 2021. The lockdown period was categorized into six stages. The geographical distribution of COVID-19 showed strong spatial autocorrelation with global Moran's for all six stages. The spatial clusters of COVID-19 incidence were reported in the high population density cities and cities in the southern belt connecting with the Indian border.

Conclusion

Government's strict prevention and control measures including social restriction and social distance in higher population density areas were helpful to reduce the spread of COVID-19 transmission.

Keywords

Nepal, COVID-19, Spatial Analysis, HDI, Population Density, Impact

2.2.15 Knowledge, Attitudes and Practices of Electronic Cigarettes and its associated factors among Undergraduate Students of Institute of Medicine, Tribhuvan University

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Background

Undergraduates from medical colleges are future health professionals who will bear their responsibility of providing adequate knowledge and promoting healthy habits among their patients. Since the usage of electronic cigarettes (also known as e-cigarettes) has rapidly expanded, little is known about what medical students in Nepal are taught or know about them.

Methodology

This study aimed to examine knowledge, attitudes and practices regarding e-cigarettes, as well as its associated factors in undergraduate medical students in Nepal. A cross-sectional study was conducted among 302 undergraduate medical students at the Institute of Medicine, Kathmandu, Nepal. Data was collected through a validated structured questionnaire in the online google form by using email. Associated factors were examined using Chi square test of association at the level of significance of 0.05.

Results

A total of 70.9% have heard about e-cigarettes. Among them, 54.7% had a good level of knowledge of e-cigarettes, 54.2% had an opposing attitude towards e-cigarettes use and 79.4% have never used e-cigarettes. Among the users, six respondents were daily users. Factors like age (p=0.015) and education level (p=0.027) were significantly associated with knowledge of e- cigarettes. Also, the practice of e-cigarettes was significantly associated with sex of the respondents (p=0.006) and friends with smoking habits (p=0.003). However, no significant difference was found between attitude and independent variables.

Conclusion

Despite the fact that e-cigarette use was not widespread among students and most of them were aware of what they are, it was evident that there was the lack of proper knowledge along with negative attitudes towards e-cigarette use to which proper awareness campaigns and facts based information advertising is a need.

Keywords

Attitude, Electronic Cigarette, Knowledge, Nepal, Practice, Undergraduate

2.2.16 Sleep quality, smart mobile phone addiction and depressive symptoms among undergraduate medical students of low resource setting country Nepal

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Background

Sleep quality, smart mobile phone addiction, and depressive symptoms are significant public health issues worldwide, including in low-resource settings like Nepal. This study aims to explore the associations between sleep quality, smart mobile phone addiction, and depressive symptoms among undergraduate medical students in Nepal.

Methodology

A cross-sectional study was conducted among 212 undergraduate medical students studying in Maharajgunj Medical Campus. We assessed sleep quality, smart mobile phone addiction, and depressive symptoms in these students using Pittsburgh Sleep Quality Index, Smartphone Addiction Scale Short Version, and Patient Health Questionnaire-9 respectively. Multivariate linear regression analysis was performed to examine the relationship between the characteristics of the participants and sleep quality, smart mobile phone addiction, and depressive symptoms. The mediating effect of sleep quality on the relationship between depressive symptoms and smart mobile phone addiction and vice versa were examined using bootstrapping method.

Result

Among 212 Medical students, 38.2%, 44.8%, and 27.8% of students have poor sleep quality, smart mobile phone addiction, and depressive symptoms respectively. Males showed higher smart mobile phone addiction and depressive symptoms scores than females (b=5.3, Bca 95% CI:1.2,9.1). Any self-reported health problem was significantly associated with higher scores for smart mobile phone addiction (b=-7.6, Bca 95% CI: -13.4, -1.8) and depressive symptoms (b=-

4.6, Bca 95% CI:-7.8,-1.6. Smart mobile phone addiction is statistically mediated by 36.5% of the indirect effect of sleep quality on depressive symptoms.

Conclusion

The findings of this study suggest that interventions to improve sleep quality and reduce smart mobile phone addiction may be effective in reducing depressive symptoms among undergraduate medical students in low-resource settings such as Nepal.

Keywords

Sleep quality, smart mobile phone addiction, depressive symptoms, medical students

2.2.17 Self-medication among medical students of Kathmandu Valley

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Background

Self-medication has been widely used globally, most commonly by medical students, for self-diagnosed minor symptoms of health problems. Self-medication can be beneficial if used responsibly but can potentially cause harm as well.

Objectives

To identify the self-medication practice among medical students.

Methodology

A cross-sectional descriptive research design was used. The study was conducted among medical students studying in Bachelor Science in Nursing, Post-basic Bachelor Nursing Science, Bachelor in Public Health, and Bachelor in Pharmacy in different colleges of Kathmandu valley. Students were selected through a convenient sampling technique. The calculated sample size was 372. Data were collected using self-developed google form for 2 months. Total 285 students filled-up the form representing 76.6% response rate. Data analysis was done by using descriptive statistics like frequency, percentage, mean and standard deviation and inferential statistics like chi-square test.

Result

Nearly all (93.0%) students have used self-medication. Among them, more females used self-medications (83.0%) than males (17.0%). Likewise, self-medication was equally high (26.0%) among students of Bachelor Science in Nursing and Bachelor in Pharmacy. Most of the students used self-medication due to mildness of illness (63.8%). The common health condition for self-medication was common cold (67.4%), the most common drug used was antipyretics (71.2%), and preferred route was oral route (97.0%). Pharmacy was the source of medication for almost all (98.5%) students. Only 12.3% students experienced side-effects, after which, 74.3% stopped medications and consulted doctors. Further, there was a significant association between self-medication among students and the presence of self-medication in family (p-value=0.007).

Conclusion

Nearly all of the students have used self-medication. Most of the students' source of medication for self-medication was pharmacy. Maximum students used self-medication due to mildness of illness. Self-medication was used for common cold and the common drug used was antipyretics. There was a significant association between self-medication among students and the presence of self-medication in family.

Keywords

Medical students, Self-medication

2.2.18 Patients' perspective on community pharmacy services of a ward (10) of Kathmandu Metropolitan

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Background

Community pharmacists' role is shifting from product-oriented function towards the patient-centered care. The patients' centered role of pharmacists is undervalued as the public is unaware of pharmacists' role. This study aims to identify patients' perception and satisfaction towards pharmaceutical care services and factors affecting their preferences for community pharmacy services.

Methodology

A quantitative cross-sectional study was conducted for three months on patients visiting registered community pharmacies in Kathmandu metropolitan ward number 10. Online google questionnaire was built to collect data.

Results

Out of 406 participants, 30.5% of respondents perceive pharmacists to have a balance between business and health aspects of pharmacy practices, 29.1% view them as drug experts, while 11.8% consider pharmacists as being more concerned with business. Around 44% of participants were found to discuss their drug-related queries with pharmacists, possibly due to low treatment costs. More than 70% of respondents had no hesitancy when contacting pharmacists for health-related information because they believed pharmacists were sufficiently qualified to address drug-related

questions. Around 88 % of respondents agreed that the role of pharmacists is to counsel the patient about the directions for the use of medications. Level of satisfaction indicated that 72.4% are highly satisfied with pharmacy services. In addition, patients feel comfortable discussing their health with pharmacists due to their ability to protect the privacy of their medical records. In contrast, more trust in doctors seems to be the most common barrier for patients visiting pharmacists.

Conclusion

Overall, pharmacists were regarded as the most trusted health care personnel to contact; however, to facilitate the expansion of pharmaceutical care services, public should be made aware of their distinctive professional talents. It is recommended for future researchers to comprehend the subjective perspective of pharmacy staff, managers, and pharmaceutical policymakers in the future.

Keywords

Community pharmacy services, Community pharmacist, Perception, Nepal

2.2.19 Association between biomass fuel use with related respiratory symptoms among middle aged adults in selected community of sindhupalchok district.

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Introduction: Biomass fuel are the products (biogas, cow dung, crop residues, firewood, coal) used in households for different domestic purpose. Biomass fuel has been used as common and cheapest method used in developing countries.

Objective

To find out the association between biomass fuels use with related respiratory symptoms (cough, phlegm, wheeze, breathlessness) among middle aged adults

Methods and Materials

A cross-sectional descriptive study was conducted at Sunkoshi Rural Municipality, ward no. 7, Pangretar community at Sindhupalchok District among. Non probability purpose sampling technique was adopted to select the sample and sample size was 113.Structured questionnaire was used for data collection. Statistical methods like mean, frequency, percentage, chi-square test were used to analyze data by using SPSS version 20.

Results

Among 113 biomass fuel users, the study showed that there is association between use of coal ,cheapest method for using biomass fuel ,cooking as purpose for using biomass fuel and traditional cook stove with cough (p-value- 0.005,0.009,0.025,0.05) respectively. The association between age, nuclear family, chimneys, open space in roof, non-separated kitchen with phlegm was statistically significant (p-value= 0.031, 0.005, 0.011, 0.043, 0.024) respectively. Similarly it showed that there is association between non- separated kitchen and 8-12 hours, exposure time per day with breathlessness (p-value= 0.025 ,0.014) respectively.

Conclusion

The research finding concludes that majority of respondents had association between socio-demographic characteristics with phlegm while majority of respondents had association between household characteristics with phlegm and breathlessness. Similarly majority of respondents have association between uses of biomass fuel characteristics with cough, breathlessness. However, there was no significant association between socio-demographic, household, and uses of biomass fuel characteristics with wheeze.

Keywords

Keywords: biomass fuel use, respiratory symptoms, middle aged adult

2.2.20 Determination of Alcoholic Concentration in Four Different Home Brewed Alcoholic Beverages Using Gas Chromatography

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Background

Alcohol, one of the most commonly consumed beverages across the world is manufactured both industrially as well as locally in Nepal. The proportions of locally brewed alcoholic beverages are higher due to geographical variation as well as presence of a population with different cultural Background. Even though the industrially manufactured alcoholic beverages are quantified, the home brewed beverages usually are produced and consumed without quantification. These alcoholic beverages consist of various components such as ethanol, methanol, iso-propanol, iso-butanol and others, each component having different pharmacological properties.

Methodology

A cross sectional study. Probability random sampling method was used for sample collection and sampling whereby one liter of each sample was collected from four different sites at Chandannath, Jumla. These samples were chhyang, local raksi, nigar and local apple cider, each manufactured chiefly from kodo millet, apple, rice and apple respectively. These samples were labeled as sample 1, sample 2, sample 3 and sample 4 by the principal investigator. The samples were taken to Zest laboratory, Bhaktapur and the beverage type were not disclosed to the laboratory and only allocated sample number was provided. All four samples were analyzed to determine the concentration of different alcohols using Headspace Gas Chromatography (GC). Unknown concentration of different alcohol in the sample was measured by injecting standard sample with known concentration.

Results

The concentration of alcoholic components in four different home brewed alcoholic beverage samples were determined using GC with ethanol concentrations being 14.209%v/v, 16.323%v/v, 11.473%v/v and 49.217%v/v in sample 1, sample 2, sample 3 and sample 4 respectively. All four samples didnot detect any contamination except for sample 4 which was contaminated with iso-butanol (0.063% v/v).

Conclusion

Various alcoholic components are present in home brewed alcoholic beverages at varied concentration levels and quantification of these beverages is highly essential in order to prevent health hazards associated with these components.

Keywords

Alcoholic beverages; alcohol concentration; home brewed alcohol; gas- chromatography; Nepal.

2.2.21 Association of multiple role and stress level among female school teachers in Mahalaxmi Municipality

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Background

Multiple role are played by every women especially married working women and the socio-cultural factors that causes stress among married working women and role satisfaction are rarely addressed. Being an earner as well as completing the family responsibilities, which could be very demanding, could cause stress in working women.

Methodology

A cross-sectional; descriptive study was conducted among the married female school teachers in Mahalaxmi Municipality. Simple random sampling was used for schools selection and probability proportionate allocation was used for teacher selection. The sample size of the study was 190. Self-administered questionnaire was used as data collection technique. The questionnaire was based on Perceived Stress Scale (PSS) and SPSS version 25 software was used for data analysis.

Results

In this study more than half of the participants were of age 35 and younger. Among 190 respondents from the study, 130 of them mentioned that they perform more than three roles which is 68.42%. The prevalence of moderate stress was seen high (76.3%) among the study population and 9.5% had high level of stress. More than one tenth (11.6%) of the respondents answered that they could not do anything when they were stress for its management. Mother was the most (87.4%) satisfying role whereas student (22.6%) and teacher (37.4%) were least satisfying role in the study. In the study multiple role, parental responsibility and role as a daughter in-law were found to have significant association with level of stress among married female school teachers.

Conclusion

The findings of this study has revealed that overall prevalence of the moderate stress was high. The study concluded that there was significant association of the role as a daughter in-law, parental responsibility and multiple role with stress level.

Keywords

Married, Female School Teacher, Perceived Stress, Nepal

2.2.22 Prevalence of adolescent obesity and its associated factors in rural Nepal: A cross sectional study

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Background

Overweight and obesity are major risk factors for chronic diseases and are the leading cause of mortality worldwide. Obesity during adolescence is strongly associated with adulthood obesity leading to increased morbidities and mortality. The aim of this study was to determine the prevalence of adolescent obesity in a rural district of Nepal and find out its associated factors.

Methodology

An institution-based cross-sectional study was conducted among the adolescent students studying in classes 8, 9 and 10 in Gosaikunda rural municipality of Rasuwa district, Nepal. Simple random sampling was used and Global School-based Health Survey (GSHS) standard questionnaires were used in collecting the information. Height and weight measurements were taken, and the body mass index was classified according to Asia-Pacific criteria. The collected data were analyzed using the Statistical Package of Social Sciences version 20. Logistic regression analysis was used to evaluate the associated factors.

Results

Out of 267 students, 38 (14.2%) were obese and 39 (14.6%) were overweight. Among 164 female participants, 34 (24.7%) were obese and 31 (18.9%) were overweight. Likewise, among 103 male

students, 4 (3.9%) were obese and 8 (7.8%) were overweight. Of the total participants, 44 (16.5%) students were underweight including 23 (14.0%) female and 21 (20.4%) male students. In multivariate analysis, mid-adolescence (15-17 years) and female gender were found to be significant independent predictors of being overweight/obese.

Conclusion

More than one-quarter of the adolescents were found to be obese/overweight along with a significant proportion of underweight adolescents. School health awareness programs aiming to promote a balanced diet and active lifestyle among students are imperative. More comprehensive studies which elaborately measure the type and amount of food intake and physical activity of adolescents are recommended.

Keywords

Adolescents, Nepal, Obesity, Overweight, Prevalence

2.2.23 Mental Health Status and its associated factors among Internally Displaced Persons in Tadi Rural Municipality, Nuwakot, Nepal

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Background

Internally displaced persons (IDPs) are the group of people who are compelled to move to another place within the border of the country and this migration may be due to armed conflict, situations of generalized violence, violation of human rights and natural or human-made disasters. The studies focusing on mental health problems and their risk factors among IDPs are inadequate although there are currently 50.8 million IDPs in globally and 29000 IDPs in Nepal. The majority of the internally displaced persons reside in low-income countries suffering from war, natural disaster and so on where mental health has been historically neglected. The study aims to assess the mental health status of IDPs who had been displaced due to the 2015 earthquake and factors associated with these symptoms

Methodology

A descriptive cross-sectional study was conducted among 226 IDPs in Nepal. Random sampling methods were followed and face-to-face structured interviews were conducted to collect data. The Hopkins Symptom Checklist-25 (HSCL-25) was used to measure symptoms of depression and anxiety, whereas the PTSD Checklist—Civilian Version (PCL-C) was utilized to measure PTSD symptomatology. Descriptive analysis was done to identify the distribution of socio-demographic characteristics and chi-square test was used to analyze the relationship between categorical variables

Results

The rates of anxiety, depression and PTSD symptomatology were. 59.7%, 49.1% and 27.0 % respectively. Gender, Marital status, Status loss and Feeling on arrival at new place were significantly associated with all psychological distress However, the socio-demographic variables education and occupation was significantly associated with anxiety symptoms only. The socio-demographic variable age was not associated with any these psychological distresses. The education level and occupation were not associated with depression and PTSD symptoms.

Conclusion

This research concludes high rates of psychological distress and associated factors were identified among IDPs, especially among women, thereby underlining the need for collection assistance for IDPs.

2.2.24 Challenges in implementing National Tuberculosis Program during the COVID-19 pandemic in Nepal: A qualitative study from health authorities and health service providers' perspective

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Background

Tuberculosis (TB) is a leading infectious disease that claims 1.5 million lives each year. In 2018, TB caused an infection in 1.7 billion, approximately 23% of the world's population. In 2017/18, TB prevalence rate was 416 cases per 100,000 in Nepal. The COVID-19 pandemic has caused a disruption in the diagnosis and treatment of TB. Hence, the study aimed to explore the impact of COVID-19 pandemic on the management of the TB program in Nepal.

Methodology

We conducted the qualitative study by using key informant interviews (KII) with purposely selected health authorities (HA) (42) and health service providers (HSP) (72) from different levels

(2 from central; 7 from provincial; 42 from the district; 21 from the municipality; and 42 from DOTS service center) of the government. The face-to-face KIIs were conducted in Nepali language using open-ended interview guidelines post prior written consent. All the interviews were transcribed verbatim and coded using a standard codebook developed through the deductive-inductive method; and finally, analyzed thematically on Microsoft Excel.

Results

The identified challenges to managing the TB program during the COVID-19 pandemic were: lack of clarity in responsibilities to manage the TB program within tiers of government; inadequate preparedness for the management of TB condition; restriction of mobility; prioritization of COVID-19 response over the TB program; overburden among HSPs at primary healthcare level; fear of COVID-19 transmission; insufficient medical supplies and frequent stockouts; lack of proper recording and reporting; and, inadequate monitoring and supervision (M&S).

Conclusion

Impact of the COVID-19 pandemic on the TB program could be lessened by the continuation of TB services through door-to-door service, adequate human resources, adequate medical supplies in health facilities and proper M&S and coordination among tiers of government.

Keywords

Key Words: Directly Observed Treatment Short Course, Tuberculosis, Covid-19 impact

2.2.25 Knowledge of cervical cancer, risks perception, and practice of Pap smear test among young adult women of Dhulikhel municipality, Nepal

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Background

Despite being one of the most preventable forms of cancer, cervical cancer remains an important public health problem, especially in developing countries. Knowledge, perception, and practice of cervical cancer are important determinants of women's participation in preventive practices for cervical cancer. This study aimed to assess the knowledge of cervical cancer, risk perception, and practice of Pap smear test among adult women of Dhulikhel municipality of Kavreplanchowk district in Nepal.

Methodology

A community-based cross-sectional study was conducted among 422 women (aged 18-45 years) across the Dhulikhel municipality of Nepal. Participants were selected by systematic random sampling and a face-to-face interview technique was deployed for data collection. A descriptive analysis was done to identify the socio-demographic characteristics of the participants. Chi-square test was used to determine factors associated with perception at a 95% significance level.

Results

The mean age (±SD) of the participants was 30.7±7.9 years. This study found that around 55% and 38% of women had heard about cervical cancer and pap-smear test. Of those who had heard of Pap test, only 37.6% had ever done a Pap smear test. Similarly, 33.2% and 12.1% knew about correct age group and time interval to perform Pap test respectively. Among those who had heard about cervical cancer, nearly 57% positive perceptions towards cervical cancer which was associated with the age, family type, and marital status of participants.

Conclusion

We found inadequate knowledge and practice of cervical cancer and Pap smear test among the women of Dhulikhel municipality, Nepal. This study concluded the need for a focused and effective health awareness program to promote the awareness of cervical cancer and Pap smear test in the community level.

Keywords

Cervical cancer, Knowledge, Nepal, Pap smear test, Practice

2.2.26 Mental health literacy and seeking behavior in school-going adolescents of Budhanilkantha Municipality, Kathmandu

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Background

About 70 to 75% of mental health issues are observed in ages 12 to 25 globally. In Nepal, a staggering 85% fail to receive proper help; thus, it is essential to assess their mental health literacy (MHL) and seeking behavior (SB). Therefore, we conducted this study to determine MHL, SB, and associated factors among adolescents in public higher secondary schools of Budhanilkantha Municipality, Kathmandu, Nepal.

Methodology

Between April to November 2019, we conducted this institution-based cross-sectional study among two randomly selected public schools of Budhanilkantha Municipality. The data on MHL and SB were collected from 198 Grade 12 students. A Nepali-translated version of the MHL Scale and an SB-related questionnaire were administered. Data was entered in Epi-Data, imported to SPSS, and analyzed through descriptive analysis in frequency (percentage) and median. Scores equal to and above the median cut-off were considered good MHL. The association between MHL, SB and the covariates was measured through the Chi-Square test. Statistical tests were considered significant at a p-value <0.05 (95% CI).

Results

With a median cut-off score of 105, the study showed good MHL among approximately half of the study population. MHL had a statistically significant association with social support and exposure to mental health information. Likewise, 81.3% of the participants preferred mental health seeking, but most chose informal sources. SB was found statistically significant with economic dependence, social media use, and exposure to mental health information. However, there was no significant association between MHL and SB.

Conclusion

With good MHL in half of the sample and informal SB in the majority, an extensive integration of mental health into the school curriculum and media, along with social support promotion, can further engender MHL and SB. Analyzing barriers to formal health-seeking might be a potential way to promote formal SB.

Keywords

'mental health literacy,' 'mental health,' 'health seeking behavior,' 'Nepal,' 'Asia,' 'India'

2.2.27 ''Ho-DiRECT''- A food-based educational and home economic intervention for Type 2 diabetes remission in Kavrepalanchowk and Kathamndu districts of Nepal

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Background
Type 2 diabetes (T2D) has been shown to be reversible, remission to a non-diabetic state without need for medication, by substantial weight loss in UK Diabetes Remission Clinical Trial (DiRECT). Therefore, this project aims to establish, evaluate and generate pilot data to improve a novel low-cost, community-owned, intervention for weight loss, using traditional Nepalese meal patterns, based on the principles of the DiRECT.

Method
The study employed a single-arm intervention and follow-up design among the patients visiting Metro Kathmandu Hospital. We recruited 70 individuals who had been diagnosed with type 2 diabetes within the past 6 years, and had a body-mass index of ≥ 23 kg/m^2. The intervention comprised total diet replacement (TDR) (850 kcal/day) for 8 weeks, weight loss maintenance phase (1200kcal/day) for 52 weeks. The primary outcome is remission of diabetes, defined as

glycated haemoglobin (HbA$_{1c}$) of less than 6·5% (<48 mmol/mol) after at least 2 months off all antidiabetic medications, from baseline to 12 months.

Results

Of those patients who have commenced the weight loss programme, their mean body weight at baseline (n=70) was 74.8 kg (9.5), at 8 weeks (n=52) was 70.8 kg, and at 24 weeks (n=30) was 68.2 kg. Thus the mean weight loss was about 4 kg and 6 kg at 8 weeks and 24 weeks respectively. The mean HbA1c at baseline (n=70) was 8.15%. After the program, the mean HbA1c at 12 weeks (n=42) was 6.85%, and at 24 weeks (n=30) was 6.86 %. Thus HbA1c fell, possibly by as much as 2%.

The number of patients in remission from type 2 diabetes after the weight loss programme (ie HbA1c below 6.5% (48mmol/mol) and with no medication for at least 2 months is currently 11/30 (36.7%)

Conclusion

The diet programme for weight loss is attractive to many people with type 2 diabetes. So,it is important to focus on the appropriate approaches for the retention.

Keywords

Type 2 Diabetes, Diet, Weight Loss, Remission, Nepal

2.2.28 Prevalence of off-label use of drugs in pediatric patients: A retrospective study

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Background

Off-label use of drugs is defined as the medication that is used to treat a disease or medical condition that has not been licensed for treatment with that medication or the dosage regimen. The usage of drugs in an off-label manner is found to be in practice worldwide and especially in pediatric patients. Although this approach is lawful, an evidence-based database would be a safe and effective way to create the ideal drug therapy.

Methodology

The objective of this retrospective study was to identify the prevalence of the use of off-label drugs. Within the time span of "February 2019 to February 2020" (12 months), the medical records in the inpatient pediatric department at Kathmandu University Teaching Hospital were reviewed. The reviewed medical data were recorded using individual case report forms and analyzed with reference to the World Health Organization Model List of Essential Medicines for children. Ethical approval for the work was obtained from the Institutional Review Committee of the Kathmandu University School of Medical Sciences.

Results

A total of 624 medical records were reviewed that included 2,398 drugs. The prevalence of off-label prescribing was 44.1% in children aged 2-12 years followed by 37.5% in those aged <2 and adolescents (12-16 years) at 18.4%. The most often prescribed drugs were antibiotics (36.2%), Non-Steroidal Anti-Inflammatory Drugs (22.1%), and Proton-Pump Inhibitors (4.5%).

Conclusion

Off-label prescribing of medications in pediatric patients was observed to be highly prevalent. While it is morally right and justifiable to use medications in an off-label manner, such use should be rational and based on evidence.

Keywords

Off-label use, pediatric, child, adolescents

2.2.29 Help-Seeking Behaviour in Mental Health among the Students of Kathmandu University, Nepal

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Background

Mental illness stigma has been identified by national policymakers as an important barrier to help-seeking for mental health. Mental disorders are as prevalent among college students as same-aged non-students, and appear to be increasing in number and severity. Thus, this study aims to assess help-seeking behaviour and attitude toward mental health among the students of Kathmandu University of Nepal.

Methodology

A cross-sectional study was conducted among bachelor level students 18 or above in years. Self-administrated questionnaire was distributed to the participants for the data collection. A validated tool General Help Seeking Questionnaire (GHSQ) was used for this study. Kathmandu University was selected randomly using lottery method among the universities of Nepal for the study site. Univariate analysis was performed to assess the characteristics of participants. Chi-square test was done to determine the association between participant's characteristics and help-seeking behaviour towards anxiety, depression and suicidal ideation. All the tests were set at statistical significance level p-value <0.05.

Results

A total of 422 students were participated in this study. Half of the participants were male (52.1%) and female (47.9%). The majority of the participants would extremely likely to get help from psychologist and counselor towards anxiety (45.7%), depression (41%) and suicidal ideation (51.9%). This study demonstrated 41.5%, 35.1% and 41.5% of the participants would wait for a month for seeking help during anxiety, depression and suicidal ideation respectively. The major reason for not seeking help for mental health was negative attitude of community people towards the people seeking for help (34.2%). Depression and suicidal ideation were significantly associated with ethnicity while anxiety was significantly associated with gender and resident in this study.

Conclusion

This study concluded students are often stigmatized and afraid of community people for seeking help from healthcare professionals. Thus, campus strategies to enhance help seeking should be tailored to address identified facilitators and barriers for treatment among the students.

Keywords

Help seeking behaviour, Kathmandu University, Nepal

2.2.30 Facilitators and Barriers towards National Tuberculosis Program during the Period of COVID-19 pandemic: A Qualitative Study from the Patient's Perspective

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Background

Tuberculosis remains a major public health program in Nepal. However, the COVID-19 pandemic has led to a change in prioritization which has affected many aspects including the functioning of the National Tuberculosis Program (NTP). Thus, this study aimed to determine the patient's perspective towards the Directly Observed Treatment Short Course (DOTS) services of NTP during the COVID-19 pandemic in Nepal.

Methodology

A qualitative study was conducted among 117 patients using in-depth interviews. A purposive sampling technique was performed to select one DOTS center from every 21 districts of seven provinces of Nepal. The study period was categorized into the first and second lockdown phases. Then, findings were as the pre-COVID, during-COVID, and post-COVID data for each lockdown phase. A thematic analysis approach was used for data analysis utilizing inductive and deductive coding.

Results

The major facilitators for the DOTS program included; timely availability of TB treatment medicine and health staff, TB patients from rural areas and financially poor were prioritized at the point of service, provision of incentives for TB patients, door-to-door service for sputum collection, and old age TB patients were financially supported. The major barriers include; difficulty in commuting to DOTS centers due to lockdown restrictions and poor transportation, fear and anxiety of transmission of COVID-19 infection, financial issues in reaching DOTS centers, lack of TB diagnostic and screening services, and poor functioning of laboratory equipment in the health facilities, and difficulty in sharing health condition due to discrimination in society towards TB patients.

Conclusion

This study demonstrated TB patients were negatively affected during the period COVID-19 pandemic. The preparedness for such circumstances needs to be done considering the perspectives of the patients and the health providers.

Keywords

Tuberculosis, DOTS, Patients, Nepal

2.2.31 Comparative Quality Assessment of Different Marketed Brands of Sitopaladi Churna, an Ayurvedic Formulation Available in Pokhara Metropolitan, Nepal

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Background

Sitopaladi Churna is a widely used polyherbal formulation of Ayurveda used in treating different respiratory diseases. It contains *Cinnamomum Zeylanicum* (Dalchini), *Elletaria cardamomum* (Sukmel), *Piper longum* (Pipla), *Bambusa bambos* (Vamsalochan), and *Saccharum officinarum* (Mishri). Standardization of ayurvedic formulations is still a challenging aspect due to their polyherbal nature. This study aims to compare some concrete quality control parameters and recommend for the standardization of Sitopaladi Churna based on scientific study.

Methodology

In our study, we compared various quality parameters including packaging, labelling, and price variations of five different commercial brands of Sitopaladi Churna (formulations A to E).

Similarly, we investigated organoleptic properties, physiochemical properties, FTIR spectra, antioxidant activity and glucose content of them along with in-house Sitopaladi Churna (formulation F).

Results

The results revealed high variations in packaging, labelling, organoleptic and physiochemical properties among different samples of Sitopaladi Churna. As per respondents, formulation C was sweetest and most pungent formulation was formulation F. FTIR peaks values and their corresponding functional groups for different formulations were similar. Physiochemical properties of all formulations were found within the standard value provided by Ayurvedic Pharmacopoeia of India except for percentage residue left and alcohol soluble extractive value. There was notable difference in pH of formulations ranging from acidic to basic (5.57-9.55). The flowability of the formulations was found poor in both market formulation and in-house formulation. Radical scavenging activity of standard ascorbic acid (IC_{50}=1.12 plus minus 0.02 microgram/ ml) was higher than tested samples (IC_{50} value ranging from 3.09 plus minus 0.006 microgram/ml to 13.75 plus minus 0.03 microgram/ ml). Average total carbohydrate content found in samples was 0.077 plus minus 0.143 mg glucose/ 0.1 mg dry Churna.

Conclusion

The results obtained here for standardization of Sitopaladi Churna will be helpful in developing a quality control profile of this formulation and it can be considered as tool in assisting scientific organizations and manufacturers in developing standards.

Keywords

Pokhara Metropolitan, Quality assessment, Sitopaladi Churna, Standardization.

2.2.32 Factors Associated with Multi-morbidity among Elderly in Bidur Municipality, Nuwakot district

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Background

Older age is characterized with the emergence of various complex health related states. These are the consequences of multiple underlying factors. Multi-morbidity is commonly observed in the ageing population. This study was carried out in order to describe the prevalence of multi-morbidity in the elderly and its associated factors.

Methodology

This was a community based cross sectional analytical study based on quantitative method in two wards of Bidur Municipality of Nuwakot district. Individual elderly aged sixty and above were the study unit. The sample size was 296, taken based on systematic random sampling. Face to face interview technique using standard tools were used for data collection.

Results

Diseases including heart disease (Hypertension, high cholesterol, myocardial infarction, and stroke), COPD, arthritis, diabetes and others were considered for multi-morbidity. Majority i.e. 41.9% perceived their health as good. About 54.1% were involved in physical hard works and 57.4% knew about free health checkup. Majority i.e. 86.1% ranked for full body function and 67.2% almost always suffered from depression. Among 296 respondents 47% had no disease, 34.1% had one condition and18.9% had two or more disease conditions. Hypertension was the most prevalent disease. Out of the 56 respondents with multi-morbidity, 69.6% had two conditions, 21.4% had three conditions, 7.1% had four conditions and 1.8% had five conditions. Commonly occurring multi-morbidity included heart disease with diabetes (14.3%), heart disease with COPD (5.4%) and heart disease with arthritis (1.8%). The prevalence of multi-morbidity was significantly different based on percentage of doing hard work, knowledge on free health services, geriatric depression, and activity of daily living with p-value <0.05.

Conclusion

This study was able to depict the status of chronic diseases and co-existence of various chronic diseases in elderly and provided information on factors associated with multi-morbidity like physical hard work, knowledge on free health service, activity of daily living and depression.

Keywords

Elderly, Multi-morbidity

2.2.33 Adherence to preventive measures of COVID-19 among school students of gokarneshwor municipality

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Background

SARS-CoV-2 is a new strain of virus that can cause serious illnesses ranging from mild, moderate to severe disease. Still, there is no effective treatment for coronavirus (COVID-19). Hence, the most effective way to prevent the disease is to adhere to preventive measures for COVID-19. Thus, the aim of this study was to assess the adherence to preventive measures for COVID-19 and associated factors among school students of Gokarneshwor Municipality.

Methodology

A descriptive; cross-sectional study was conducted among school students of Gokarneshwor Municipality from Nov 21 – Nov 24, 2021. The sample size of the study was 278 and the probability proportional size sampling (PPS) technique was used to select the study participants. Self- administered questionnaire was used to collect the data. MS- Excel was used for data entry and IBM SPSS 25 was used for analysis in the study respectively. Descriptive and bivariate analysis was done and binary logistic regression was used to identify associated factors with preventive measures for COVID-19.

Result

The overall good adherence to Preventive measures for COVID-19 was 68.7%. The good knowledge of COVID-19 of study participants was 54% [COR: 1.70; CI (1.02-2.847)]. The positive attitude towards COVID-19 was 52.2% [COR: 1.75; CI (1.053-2.935)]. Sex, Female participants [COR: 2.08; CI (1.244- 3.480)], knowledge of COVID-19, Attitude towards COVID-19, Preventive measures practiced by school [COR: 8.41; CI (4.638-15.263)], and Health education on COVID-19 [COR: 2.86; CI (1.430-5.757)] were significantly associated with adherence to preventive measures of COVID-19.

Conclusion

This study found that more than half of the study participants had good adherence to preventive measures of COVID-19. Sex, knowledge of COVID-19, Attitude towards COVID-19, preventive measures practiced by schools, and health education on COVID-19 were associated factors for adherence to preventive measures of COVID-19.

Keywords

COVID-19, Adherence, Knowledge, Attitude, Students, School, Gokarneshwor Municipality

2.2.34 Suicidal and Self-harm Behaviors among Young Adults of Kathmandu District; A cross-sectional descriptive study

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Background

Suicide is an emerging public health problem accounting for over 800,000 annual deaths globally. It is also the second leading cause of death among the age group 15-29 years in the world. In Nepal, on average 14 people commit suicide every day. Our study explores the factors associated with suicidal and self-harm behaviours among young adults in the Kathmandu district, Nepal.

Methods

A descriptive cross-sectional study was conducted among a total of 242 young adults of the Kathmandu district. Data were collected through interviews using a semi-structured questionnaire. Descriptive statistics and odds ratios were used for data analysis.

Results

The mean age for initial suicidal and self-harm behaviour was found to be 14 and 15 years respectively, with 28.51% reporting suicidal behaviours including making a plan or suicidal ideation or attempts, and 18.5% with self-harm behaviours. Avoidance and emotional discharge were found as common coping strategies adopted by participants. Belief, family functioning, depression status and self-harm behaviour were found statistically associated with suicidal behaviour.

Conclusions

Various factors including belief, family functioning, and depression were found to influence individual suicidal behaviour. Hence, an integrated approach addressing these factors is crucial for the prevention and control of suicide among young adults at risk.

Keywords

Self-harm behavior, Suicidal behavior, Suicidal ideation, Young adults

2.2.35 Help Seeking Intention Regarding Mental Illness among Secondary School Adolescents of Bharatpur Metropolitan city, Chitwan

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Background

Help-seeking behaviours of adolescents are fundamental to their mental health and wellbeing. Unless effective source of support that adolescents show the willingness to seek and that meet their needs regarding emotional distress and problems, mental health problems will remain a substantial challenge to improved health and wellbeing. The main objective of the study was to assess the help seeking intention and its associated factors among secondary school adolescents of Bharatpur Metropolitan city.

Method

This is a descriptive, cross-sectional study carried out among randomly selected 375 secondary school adolescents studying at nine randomly selected public schools of Bharatpur Metropolitan

city using self-administered questionnaire. General Help Seeking Questionnaire was used to measure the help seeking intention and for the assessment of severity of the distress, General Health Questionnaire-12 was used whereas to measure the perceived family and social support, Nepali Family and Social Support and Difficulties Scale was used.

Result

72.5% of the participants reported intention to seek help. The source that the adolescents were most likely to ask for help was parents (61.40%) and relatives/family (57.70%), followed by friends (45.6%) and partners (31.60%). It was found that 27.5% of the participants were highly reluctant to any form of help seeking for any form of mental distress. The binary logistic regression analysis showed that sex (p< 0.001, OR 3.322, 95% CI: 1.976-5.583), perceived social support (p<0.003, OR: 2.60, and 95% CI: 1.43-4.74), people who believed mental illness could be cured (p<0.001, OR 3.671 and 95% CI: 1.75- 7.72) was found significantly associated with the help-seeking intention.

Discussion:

Findings from this study can be a way for future research to identify the predictors for help seeking regarding mental illness. Appropriate interventions are required focused on increasing public awareness of help sources and addressing stigma while providing supportive environment to foster mental wellbeing.

Keywords

Mental Health, Help-Seeking, Adolescents, Pathways to Care

2.2.36 Management of COVID-19 and vaccination in Nepal: A qualitative study

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Background

Good governance is paramount towards effective management of COVID-19. The aim of this research is to investigate the perspective of citizens of Nepal on the management COVID-19, the roll-out of the vaccine, and to gain an understanding of attitudes towards the governments' handling of the COVID-19 pandemic.

Methodology

A qualitative methodology was used. In-depth interviews were conducted with 18 males and 23 females aged between 20 and 86 years old from one remote and one urban district of Nepal. Interviews were conducted in November and December 2021. Thematic approach was used to analyse the data, utilizing NVivo 12 data management software.

Result

Three major themes were identified: 1) Peoples' perspective on management of COVID-19. 2) Peoples' perception on management of COVID-19 vaccination, and 3) Management and dissemination of information. The study revealed that while most participants were aware of COVID-19 and its mitigation measures, the majority had limited understanding and knowledge of the disease. Participants expressed disappointment in the poor management of COVID-19 by the government, particularly in testing, quarantine, and vaccination campaigns. Misinformation and stigma were reported as significant contributors to the spread of COVID-19. The study emphasizes the importance of providing accurate information through trusted communication channels to improve people's understanding of the pandemic and its preventive measures.

Conclusion

Our study concludes that the participants perceived the testing, quarantine centers, and vaccination campaigns in both urban and rural settings of Nepal to be poorly managed. As people's knowledge and understanding of COVID-19 are heavily influenced by the quality of information they receive,

we suggest providing contextually correct information through a trusted channel regarding the pandemic, its preventive measures, and vaccination.

Keywords

COVID, vaccination, management, Nepal, rural, urban

2.2.37 Mental health outcomes and their associated factors among people with Type 2 diabetes in Nepal

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Background

It is important to assess the comorbidity and bi-directional relationship between diabetes and mental health conditions. This study aimed to assess the status and associated factors of depression and perceived stress among people with Type 2 diabetes mellitus (T2DM) in Nepal.

Methodology

This cross-sectional study used the baseline data of an overarching community-based randomised controlled trial among people with T2DM implemented in Kavrepalanchowk and Nuwakot districts of Nepal. Data were collected between September 2021 to February 2022 from 20 rural (n=100) and peri-urban (n=230) municipalities of Kavrepalanchowk and 10 rural (n=72) and urban (n=79) municipalities of Nuwakot districts. Depression symptoms and stress were assessed using Patient Health Questionnaire and Perceived Stress Scale respectively. Data were collected

digitally, entered into KoboToolbox, and analyzed using SPSS v28. Associated factors were examined using binary logistic regression analyses.

Results

The study found that out of 481 participants, 123 (25.8%) had depression symptoms and 156 (32.4%) had moderate to high level of perceived stress. People having a monthly income of NRs <25000 were 3 times more likely to have depression symptoms (OR=2.8, 95% CI:1.21-6.30) and twice more likely to have perceived stress (OR=2.4, 95% CI:1.17-4.92) than those having a monthly income of NRs >50000. Similarly, people with low diabetes medication adherence were at thrice the risk of having depression symptoms (OR=3.1, 95% CI:1.56-6.23) and perceived stress (OR=3.4, 95% CI:1.77-6.60) compared to those with high adherence. People who consumed smoking/non-smoking tobacco products were twice more likely to have depression symptoms than those who did not (OR=1.8, 95% CI:1.06-3.13).

Conclusion

More than a quarter of people with T2DM had depression symptoms and nearly one-third had perceived stress. Proper screening and timely treatment of mental health conditions is crucial to facilitate better T2DM management. Future studies should identify new and integrated approaches to prevention and management of mental health problems in people with T2DM.

Keywords

Type 2 diabetes; depression; perceived stress

2.2.38 Assessment of use and disposal of face masks by the public of kathmandu valley during covid-19 pandemic

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Introduction

The COVID-19 pandemic caused a significant loss of life globally. Preventative measures, such as wearing masks and social distancing, similar to those used for previous respiratory infections caused by Coronaviruses, were recommended by regulatory bodies. However, despite people beginning to use masks, proper usage and disposal remain a challenging task.

Methodology

A descriptive cross-sectional study was conducted to assess mask usage and disposal among the adult population of Kathmandu Valley. Participants with medical expertise were excluded from the study to obtain a more accurate representation of the public's understanding.

Results

A total of 296 people participated in the study, among which 60.5% were male and 41.9% were from the age group 21-40 years. Most patients (80.7%) were literate or had received formal education. During the study, 90% of participants were using masks and the most used mask was surgical mask (49.8%). Among those who used masks, 90.2% followed correct technique of wearing masks but almost a third (30.2%) touched the outer surface. Almost everyone (99.7%) thought that using mask was necessary and 90.5% were confident that masks protect them from COVID-19. More than two thirds of participants (68.2%) thought that KN95 mask with a valve is the best mask. A large number of participants (43.2%) thought that fabric masks should be used by no one. Majority (50.3%) thought that masks should be replaced when they get wet, dirty and torn. Reusing a mask was normal for 93.2%, most common method to reuse was hanging somewhere in the room. Disposal in general dustbin was a norm for 94.3% of participants.

Conclusion

Regulatory bodies face a worldwide challenge in ensuring proper mask usage and disposal. Although most individuals support and correctly use masks, their knowledge and practices regarding mask disposal are inadequate. Effective interventions must be implemented by authorities to enhance the public's understanding and practices concerning mask disposal.

Keywords

mask, covid-19

2.2.39 Physical activity, diet, medication adherence, blood glucose monitoring and foot care in people with type 2 diabetes in Nepal

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Background

The prevalence of type 2 diabetes mellitus (T2DM) is increasing in low- and middle-income countries including Nepal. The practice of good self-care behaviours (i.e., physical activity, dietary habits, adherence to medication, blood glucose monitoring, and foot care) plays a vital role in controlling the disease. This study aims to report on the practice of self-care behaviours among people with T2DM in Nepal.

Methods

Data on self-care behaviours were assessed from 481 adults aged 30-70 years with T2DM from two districts (Kavrepalanchowk and Nuwakot) in Nepal. Pretested standard questionnaires were used to assess the domains of self-care behaviours (dietary habit, physical activity, medication

intake, blood glucose monitoring, and foot care). Multiple logistic regression analysis was used to determine the factors associated to self-care behaviours.

Results Physical activity (80%) was the most practiced self-care behaviour followed by a healthy diet (49.9%), medication intake (48.2%), blood glucose monitoring (32.2%), and foot care (1.7%). Significant associations for age and area of residence were observed for Physical activity. Religion and tobacco use were associated with a healthy diet. Educational status and blood glucose level were associated with blood glucose monitoring. Alcohol use and comorbid conditions were associated with medication adherence.

Conclusion Adherence to a healthy diet, medication use, blood glucose monitoring, and foot care was still inadequate among people with T2DM in Nepal. This implies the need to identify and implement socially and culturally accepted diabetes self-management educational programs to encourage and motivate people with T2DM self-manage their condition.

Keywords
Nepal, Self-care behaviour, Type 2 Diabetes Mellitus (T2DM)

2.2.40 Antigenic evidence of lymphatic filariasis transmission in 'hotspots' of the four endemic districts of Central Nepal

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Background

Sixty-one out of 75 districts were reported lymphatic filariasis(LF) endemic in Nepal. Mass drug administration(MDA) with diethylcarbamazine(DEC) and albendazole(ALB) treatment program was continued for 6 to 11 rounds in these districts. Based on the transmission assessment survey(TAS) report of 2017 indicating antigenemia prevalence <2% so MDA was stopped in 2018. But in some foci of four endemic districts, low level of *Wuchereria bancrofti* antigen persistent was found responsible for enhacing risk of infection resurgence. Hence present study was designed to assess antigenic prevalence in children borne after MDA in study area.

Methodology

Two each hotspots region of LF endemic Terai districts i.e. Bara and Mahottari and hilly districts i.e. Lalitpur and Dhading in Central Nepal were identified. A total of 791 children borne after MDA program (5-15 years) were enrolled. *W. bancrofti* antigenemia was tested using Filarial Test Strip(Alere, Scorborough ME) after recieving ethical clearance. Along with screening of clinical manifestation, Visual Filariasis Test Strip(vFTS) results were scored semi-quantitatively. The obtained data were statistically analyzed using Minitab 17 version 19.2.0.

Results

The present study covers 70% of children from eligible population. Out of four districts, Mahottari from Terai and Dhading from hilly districts were found significantly high *W. bancrofti* antigenic prevalence i.e. 13% and 10% respectively, while <2% antigenic prevalence was noticed in Bara and Lalitpur districts. Among surveyed population, 8(1%) of them had clinical manifestation of hydrocele without *W. bancrofti* antigen positive.

Conclusions

Two hotspots regions, one each from Terai (Mahottari) and hilly (Dhading) districts were found highly prevalent with *W. bancrofti* antigen and low MDA rounds in these hotspots were significantly associated with high antigenic prevalence while no association was observed with median treatment coverage and interquartile range(IQR). Higher antigenic prevalence was observed in hotspots where baseline prevalence was high, together indicating that rounds of MDA program need to be extended further along with xenomonitoring is recommanded.

Keywords

Lymphatic filariasis, Mass drug administration, Prevalence, Transmission assessment survey, W .bancrofti

2.2.41 Experiences of Nurses during the COVID-19 Pandemic in a Tertiary Level Hospital in Nepal

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Background

COVID-19 disease is known to expand very rapidly, thus it has been extremely challenging for the health care providers to deal with. Nurses are front-line workers, who provide care by continuously adapting to the rapidly changing health system environment during the ongoing COVID-19 pandemic. Identification of the nurses' experiences with regards to their work and social situation, and timely addressed of their concerns is crucial for enhancing their morale for better care. The objective of this study is to explore the experiences of nurses during the COVID-19 pandemic.

Methods

A qualitative design with a descriptive phenomenological approach was adopted for the study. A purposive sampling technique was used to select nurses working in the COVID units of a Teaching Hospital, in Nepal. Face-to-face in-depth interviews were carried out for data collection by adhering to interview guidelines. Colaizzi's analysis method was used to analyze the data.

Findings

The findings of the study explored the work, family, society, and personal emotional experiences of the nurses. They experienced difficulty due to the huge workload with prolonged duty hours.

Similarly, the frequent death of young patients without oxygen and the sorrow and agony of their family was distressing for the nurses. Likewise, the lack of skilled personnel, beds, ICU, and ventilators made the working condition more challenging. Similarly, nurses avoided disclosing their working area and positive status due to fear of discrimination. However, cooperative team members, family support, and public appreciation helped them to boost morale and gain social respect and recognition.

Conclusion

This study concludes that nurses experienced inadequate resources and social support during the COVID-19 pandemic. Thus the management should plan and provide adequate resources including guidance and counseling facilities to the nurses for adapting to such a pandemic situation. Likewise, social awareness programs about moral and emotional support for nurses need to be organized to minimize social discrimination.

Keywords

COVID-19 pandemic, Experience, Nurses, Nepal

2.2.42 Diagnostic evaluation of PanBio™, and Standard Q™ COVID-19 rapid antigen tests for the detection of SARS-CoV-2, A Cross-sectional study from Trishuli Hospital, Nepal.

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Background

The outbreak of COVID-19 pandemic has made it necessary to develop rapid and accurate diagnostic tests with high sensitivity and specificity. Many types of COVID-19 Rapid Diagnostic Tests (RDTs) are commercially available but the effectiveness of these RDTs in clinical practice is still largely unknown till this time.Two such tests, PanBio™ and Standard Q™, have been evaluated for their diagnostic accuracy in detecting SARS-CoV-2.

Methodology

We conducted an observational, single-centre, point-of-care evaluation of two Ag-RDT on nasopharyngeal swabs in contrast to RT-qPCR.

Results

Six hundred and twenty participants (52.95%) were rRT-PCR-positive for SARS-CoV-2. The overall sensitivities of PanBio™ and Standard Q™ were 60.87%(95% CI 55.84-65.74) and 59.83% (95% CI 56.51-64.35) and specificities 98.43%(95% CI 96.8-99.37) and 96.15%(95% CI 90.44-98.94) respectively. The combined sensitivity of both the RDTs was 60.48% (95% CI 56.51-64.35). The combined Sensitivity was inversely proportional with rRT-PCR-Ct values. The positive likelihood ratio was higher for PanBio™ (38.87, 95% CI 18.56 – 81.41) than for Standard Q™ (15.55, 95% CI 5.92 – 40.90). Meanwhile, the negative likelihood ratio was more than 0.40 for both RDTs. The PPV and NPV of PanBio™ were 97.14% (95% CI 94.20 – 98.62) and 74.20% (95% CI 71.75 – 76.50). Similarly, the PPV and NPV of Standard Q™ were 97.16% (95% CI 92.87 – 98.90) and 52.08% (95% CI 48.02 – 56.12). The accuracy for PanBio™, Standard Q™ and combined RDTs were 80.91%(95% CI 78.08 – 83.52), 71.17% (95% CI 65.98 – 75.98), and 78.14% (95% CI 75.66 – 80.48) respectively.

Conclusion

The PanBio™ test met the WHO set criteria of specificity of ≥ 97% for RDTs but both the tests lacked WHO set criteria of sensitivity of ≥80% for RDTs. Both the tests had comparable sensitivity and specificity.

Keywords

COVID-19, SARS-CoV-2, rapid diagnostic tests, sensitivity

2.2.43 Household food security access and dietary diversity amidst COVID-19 pandemic in rural Nepal: an evidence from rapid assessment

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Background

The pandemic led to surging concerns about food insecurity status throughout the world. In response to global and national concerns on food and nutrition security, this study aimed to examine the prevalence and determining factors of household food insecurity and dietary diversity among people from selected rural municipalities of Lalitpur district, Nepal.

Methods

A community-based cross-sectional study was conducted among 432 households. Pretested structured questionnaires were used to collect socio-demographic characteristics of the participants, household income; effect of COVID-19 on their income and livelihood, household's access to food and dietary diversity. Food insecurity was measured using the Household Food Insecurity Access Scale (HFIAS) and the Household Dietary Diversity Score (HDDS). A multivariable analysis was done using binary logistic regression model following a bivariate analysis to assess the association between the dependent and independent variables.

Results

More than one-third (36%) of the households reported some form of food insecurity. The overall mean score for Household Dietary Diversity (HDD) was 6.0 (±1.1). Multivariable logistic

regression analysis showed age, ethnicity, education and occupation as strong predictors of HFIAS whereas age and education are the predictors of HDDS. Participants from the disadvantaged ethnic group who did not attend formal education, and who attended primary education had significant higher odds of household food insecurity, with adjusted odds ratio (aORs) of 2.73 (95% CI: 1.23-6.07) and 3.67 (95% CI: 1.23-9.89) respectively. In comparison to those having higher level education, participants with no formal education were more likely to have increased scores for HDD (aOR=10.05, 95% CI: 4.05-24.91)

Conclusion

Owing to the pandemic, our study showed a substantial prevalence of food insecurity among diverse community residing in rural outskirts of Kathmandu Valley, particularly among disadvantaged ethnic group and people with lower level of education. Interventions targeting these particular groups may help in improving HFIAS and HDDS among them during emergencies.

Keywords

COVID-19, Food insecurity, Household Dietary Diversity, Nepal, Rural

2.2.44 Assessment of dietary intake and nutritional status of people with pulmonary tuberculosis in Morang district of Nepal

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Background

In 2020, among 10.8 million people with tuberculosis (PTB), a quarter of them were undernourished. TB and malnutrition have bi-directional association and severe malnutrition increases risk of mortality among PTB. In Nepal, we lack evidence of PTB's dietary pattern and nutritional status to inform treatment support strategies. This study measured nutritional status of PTB and evaluated gap between recommended energy value and dietary intake by PTB during TB treatment.

Methodology

From February to December 2022, we consecutively recruited 50 PTB and conducted mixed-methods study employing parallel study design in Morang district. We assessed dietary patterns using validated 24-hour dietary-recall questionnaire and photographic atlas. We measured weight and height using weighing machine and stature meter respectively and reported body mass index (BMI). PTB with BMI<=18.5kg/m^2 were considered underweight. Focus group discussions (FGD) with purposively selected PTB and TB providers explored barriers and facilitators to taking nutritious food during TB treatment.

Results

Participants' mean age was 47.32±17.91 years. Three-fourths of the participants were male (72%,36/50) and married (74%,37/50). Average daily energy intake was lower than the recommended value (2361±956kcal vs. 2480kcal). The study found 70% participants to be underweight. Among them, 56%, 22%, and 19% did not meet energy, proteins, and fats requirements respectively. Males consumed lower daily energy intake than recommended (67%vs33%).

FGDs identified poverty, poor purchasing capacity, inadequate knowledge and practice on balanced diet, and infertile land as major barriers to taking good nutrition. To overcome these barriers, participants suggested supporting people with very low socioeconomic conditions with education on food habits and hygiene, and monthly food packages.

Conclusions

In this cohort of PTB, high proportions were underweight and consumed food below recommended values. The study highlights the need to provide locally-appropriate food support along with integrated nutrition education programs to meet the energy requirement during TB treatment.

Keywords

dietary pattern, nutritional status, tuberculosis

2.2.45 10 years risk for cardiovascular diseases using WHO prediction chart among patients with Type 2 DM in Kavrepalanchowk and Nuwakot district

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Background

People living with type 2 diabetes, in comparison to people without diabetes have 2-3 times more chance of developing the cardiovascular disease like heart attacks, strokes, and heart failure which accounts for 32.2% of the people living with diabetes globally and is the major cause of death among them. The World Health Organization (WHO) has developed a non-laboratory based cardiovascular disease (CVD) risk chart considering the parameters of age, sex, current smoking status, systolic blood pressure, and body mass index that can be effectively used in low resource settings which is a user-friendly and affordable screening tool to determine the risk of CVD. We also aim to assess the prevalence of 10 years of CVD risk using a non-laboratory model among the diabetes population in Kavrepalanchowk and Nuwakot districts.

Methodology

This cross-sectional quantitative study is a part of a randomized control trial of community-based lifestyle management of diabetes in the Kavrepalanchowk and Nuwakot districts. The sampling used was cluster random sampling, where 30 clusters were selected randomly with 12 participants in each cluster. We enrolled clinically diagnosed with type 2 diabetes with an age group of more than 30. The sample size was calculated as 422.

Results

The majority (63%) of the respondents were male and 36.8% of the participant were under the 50-59 age group. 63% of the participants were obese and 38.5% were hypertensive. The majority of the participants had very low risk (45.9%), followed by low risk (33.9%) and 18.9% had moderate and 1% had high risk. The reading and writing ability of the participants was correlated with the risk score (correlation coefficient-.162**)

Conclusion

One-fifth of the participants have moderate to high risk of cardiovascular risk among these populations which suggests the need for preventive measures such as awareness of lifestyle modification and early detection to avoid cardiovascular disease among diabetes.

Keywords

Diabetes, non-laboratory based risk chart, cardiovascular risk factors

2.2.46 Knowledge and Practice of People Regarding Prevention of Dengue in Madhyabindu Municipality, Nawalparasi

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Introduction

Dengue is one of the growing problems in Nepal, affecting the health of thecitizens for the past few years. It is a disease caused by the dengue virus which is transmitted to a person by an infected mosquito vector.

Methods

In the study, data collection procedure in the wards of the municipality was done by using convenient sampling method. And then, the selection of respondents in the villages ofwards was done with a convenient sampling method. SPSS software was used to analyze andinterpret the findings.

Findings

The study reveals that out of 328 respondent majority of data collection was donefrom the age group 18-30 years (40.2%)The findings had shown that around 60% of the respondents had poor knowledge on denguehowever more that 50% had performed good preventive practices.

Conclusion

Based on the findings of the study, it is concluded that more than half of the respondents had poor knowledge on dengue, but more than half had performed good denguepreventive practices.

Keywords

Dengue fever, Prevention, Knowledge, and Practice

2.2.47 Bacterial Isolation and Antimicrobial Resistance Profile from different Clinical Samples at a Tertiary care Hospital, Birgunj, Nepal

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Background

Antimicrobial Resistance (AMR) is making one of the most serious global issue in terms of public health threats that cause a significant burden on patient morbidity and mortality and financial crisis in many developing countries including Nepal. The study on the type of predominantly circulating pathogens with their respective AMR profile is essential for optimum patient cares. This study was focused at finding the types of bacterial isolates and their respective AMR profile identified from range of clinical samples at National Medical College & Teaching Hospital, Southest Nepal, over a period of October to March 2023.

Methods

It is a prospective cross-sectional study in which the clinical samples were collected, inoculated and incubated for each sample in accordance with standard protocol. Antimicrobial susceptibility testing was conducted by using Kirby-Bauer disk diffusion method.

Results

From the total of 2000 different clinical samples processed in the stated time frame, about 867 (43.45%) yield bacterial growth. Majority of the bacteria isolated from pus culture at 285 (32.8%), followed by urine 263 (30.3%), blood 258 (29.7%) and sputum 43 (4.9%). The most frequently identified isolate was *S. aureus* at 310 (35.7%), followed by *E.coli,* 181 (20.8%), *Klebsiella* species 152 (17.5%) and *Pseudomonas* species at 83 (9.5%). The resistance rate of Gram negative bacteria for cefixime, ceftriazone and ampicillin in this study was between 30% and 50%. On other hand, Gram positive isolates were found sensitive to vancomycin, meropenem and imipenem at 99%.

Conclusion

This study revealed an alarming level of AMR, with a prevalence of multidrug resistant bacteria, particularly among the patients at the health facility level.

Keywords

Antimicrobial resistance, Antibiotic susceptibility test, Gram positive and negative bacteria, antibiotics.

2.2.48 Study of co-infection of malaria and dengue with COVID-19

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Background

The coronavirus infection 2019 (COVID-19) is an ongoing pandemic disease affecting more than 676 million cases worldwide with total deaths exceeding 6.77 million deaths. Co-infection with malaria and dengue in endemic regions might be of high clinical importance as the pandemic continues to spread. Our study is designed to detect malaria and dengue infections in febrile/symptomatic patients suspected of COVID-19 which will help the public, health professionals, and health sector to find out malaria and dengue co-infections with SARS-CoV-2 and subsequently their role in the COVID-19 clinical outcomes and management.

Methodology

A prospective study was carried out among febrile/symptomatic patients suspected of COVID-19 visiting STIDH. One hundred and twenty-three patients suspected of COVID-19 were investigated for rapid malaria and dengue tests in association with COVID-19.

Results

During two months period, there was no evidence of COVID-19 and malaria co-infection. However, two patients who had been hospitalized and tested positive for COVID-19 also had dengue. In both patients' laboratory tests, neutrophilia, lymphocytopenia, elevated transaminases, and elevated serum ferritin were the most common findings. There was no significant association between COVID-19 and dengue (p-value> 0.05).

Conclusion

Both co-infected patients were diagnosed on time and recovered after proper treatment without any complications. Though co-infection of COVID-19 and dengue virus is associated with significant morbidity and mortality, timely and correct diagnosis and treatment lead to quick recovery of the patient.

Keywords

co-infection, COVID-19, dengue, malaria

2.2.49 Illness Perception, Treatment Adherence and Self- Care Behaviors among Hypertensive Patients attending in the Tertiary Level Hospital, Kathmandu

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Background

Non-communicable diseases are increasing in trend globally in both developed and developing countries. Among non-communicable diseases, cardiovascular disease is the most common cause of death worldwide. Hypertension is a main cardiovascular disease which is responsible for life threatening complications and premature death. Illness perception, treatment adherence and self-care practice on hypertension are the most important measures to control hypertension and prevent long term complications.

Methodology

A descriptive cross sectional research design was used to findout the illness perception, treatment adherence and self- care behavior among 427 hypertensive patients in a Tertiary Level hospital Kathmandu. Non-probablity purposive sampling was selected, and data was colected by direct interview method from 1st September to 30th November in 2018.   Data analysis was done by using descriptive and inferential statistics.

Results

Approximately half of the respondents experienced chest pain (51.8%) and perceived it was related to illness (50.4%). Regarding illness representation components, the highest score was found in consequences (Mean ±SD: 20.33±3.65). There is a significant association between illness perception with sex (p=0) and education status (p= 0.001). The mean score and standard deviation of total treatment adherence were 16.58±2.08. More than half (57.1%) of the respondent's overall self-care behaviors were poor and only good in medication practice (mean ±SD= 20.75±1.70). Regarding correlation, there was a positive relation between illness perception with medication adherence (p<.000). There was a negative relationship between illness perception with medication intake and reduce salt intake (P<. 000) and positive relationships with appointment keeping (p<.007).

Conclusion

Illness perception, treatment adherence and self-care behaviors are poor. Perceived illness was positively related with medication adherence, appointment keeping and negatively related with diet management, physical exercise, weight management, medication intake and reduce salt intake.

So, it is recommended to conduct awareness program related to risk factors and modification of life-style of the people.

Keywords

Hypertension, Illness Perception, Treatment Adherence, Self-Care Behaviors

2.2.50 Impact of COVID-19 on mental health of people living in rural and urban areas of Nepal: A qualitative study

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Background

The pandemic had a profound impact on the lives of people worldwide. The unintended effects of social restrictions, combined with the COVID-19 disease, have resulted in an increase in potential stressors that could affect the mental health of people. The aim of this research is to investigate the impact of the COVID-19 pandemic on the mental health of people living in the urban and rural settings of Nepal.

Method

We adopted a qualitative approach for this research in one urban and one rural district of Nepal. In-depth interviews were conducted with 41 participants aged between 20 and 86 years between November and December 2021, and the data were analyzed thematically using NVivo 12 data management software.

Results

We identified three major themes: 1) Consequences of COVID-19 pandemic, 2) Effect of social media on mental health, and 3) Government mismanagement of COVID-19 and vaccination. The participants in this study discussed various challenges that have negatively impacted their psychological well-being during the COVID-19 pandemic. These challenges include increased fear, financial hardships, loss of relatives, grief over losing a sense of normalcy, and misinformation from social media, and government mismanagement regarding COVID-19 and vaccination. Overall, participants experienced heightened levels of anxiety and fear due to the highly contagious nature of the virus. In addition, poor quarantine conditions, testing issues, and vaccine distribution problems have significantly impacted the mental health of those included in this study.

Conclusion

Lack of mental health interventions, targeted support, and lack of inclusive COVID-19 response are the main reasons for the increased psychological distress. Increased counseling services, strengthening the healthcare workforce, regulating mass media, increasing awareness programs, and psychological support are way forward to ensure the current mental health situation of people.

Keywords

COVID-19, mental health, stress, Nepal

2.2.51 Using a case study on antimicrobial prescription pattern for livestock in Chitwan to inform national AMR action plan of Nepal

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Background

The extensive use of antimicrobials in human and animal populations is associated with the occurrence of microbes resistant to antimicrobials. The use of antimicrobials in livestock farming is driven partly by the imprudent prescription of antimicrobials. Therefore, it is important to analyze the antimicrobial use in livestock on the grounds of (i) therapeutic antimicrobial use on varying disease conditions, (ii) antimicrobial combinations used (iii) frequency of antimicrobial classes used, to inform the national AMR action plan.

Method

A multi-year (eight) retrospective study was conducted in the Veterinary Teaching Hospital of the Institute of Agriculture and Animal Sciences, Tribhuvan University in Chitwan. The handwritten records of prescriptions maintained in the hospital were transcribed in Excel, and the data was cleaned and analyzed.

Result

A total of 734 records was subdivided based on 170 bovine and 577 poultry antimicrobial prescription data, where a cumulative of 20 antimicrobials with 10 different classes were reported, with Doxycycline being the most frequently prescribed antimicrobial (13.04%). The use of critically important human antimicrobials listed by WHO, 18 represented 30.08% of the total antimicrobials prescribed, with Gentamicin (155) being most frequently prescribed followed by Colistin (130), Ciprofloxacin (95) and Amoxycillin (12). In aggregate, single antibiotic therapy comprised 56.1% of the total cases, followed by dual therapy (39.9%), triple therapy (3.36%), and quadruple therapy (0.54%).

Conclusion

This study delineates the practical scenario of antimicrobial use in livestock production in Nepal, and has significance to inform the national AMR action plan working group about the types of antimicrobials prescribed in the livestock sector.

2.2.52 Mental Health Risks Among Informal Waste Workers in Kathmandu Valley, Nepal

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Introduction

Informal waste workers are a vulnerable population group who are often socio-economically marginalized and disadvantaged, with more likelihood of experiencing ill health than the general population. Due to the lack of formal recognition and adequate representation, IWWs are largely isolated from most social-security schemes and legal protection frameworks. We aim to understand the possible links between socio-demographic status, substance abuse, social protections such as membership of a co-operative, and exposure to disaster (bearing in mind the recent Nepal earthquake in 2015), with depression.

Method

To explore the determinants of mental ill health in this group, we conducted a cross-sectional survey of 1,278 informal waste-workers in Nepal in 2017, using a demographic health assessment questionnaire and a modified Patient Health Questionnaire (PHQ-9). Data cleaning and analysis

were performed using IBM SPSS version 24. Descriptive analysis was presented using frequency and percentage. Crosstabulation was done between the independent variables and dependent variables.

Result

We looked at the potential associations between various exposure factors and mental health outcomes and found that 27.4% of waste-workers had depressive symptoms, more likely to be reported by female (OR 2.290), older person (OR 7.757), divorced/separated (5.859), and those with ill health (OR 2.030) or disability (OR 3.562). Waste-workers with access to social protection (OR 0.538) and financial savings (OR 0.280) were less likely to have depressive symptoms.

Conclusion

There are key risk factors that may enable identification of particularly vulnerable persons within this group and also protective factors that may help improve their mental health resilience. Decent working conditions, in both formal and informal sectors, could contribute to improve their mental health. Formalizing the waste work industry and increasing social protections may also substantially improve the psychological wellbeing of this vulnerable group.

Keywords

Depression, Informal waste worker, mental health, social protection, substance abuse

2.2.53 Co-infection with SARS CoV-2 and dengue virus with thrombocytopenia: A first case report from Nepal

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Background

Co-infection of COVID-19 with dengue infection is quite challenging to differentiate due to its overlapping clinical and lboratory manifestations. We report a 22- year-old female who presented to Civil Service Hospital, emergency department on November 2021 with complaints of persistent fever, multiple episodes of vomiting, headache and myalgia. On examination, she ill-looking and dehydrated. Reverse-transcriptase polymerase chain reaction of nasopharyngeal swab detected SARS CoV-2, and dengue IgM antibodies were detected. She was managed in COVID-high care unit with regular laboratory monitoring of platelet level and discharged on ninth day of admission.

Methodology

Qualitative study

Results

It is difficult to differentiate COVID-19 and dengue based upon their clinical symptoms and laboratory findings due to their similarities.

Conclusion

Early diagnosis and interventions are needed to prevent life-threatening complications.

Keywords

Case Report, COVID-19, Dengue, Thrombocytopenia

2.2.54 Substance use among youth (15-24 years) in the remote and rural highland of Karnali province, Nepal: A cross-sectional study

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Background

Globally, substance use including alcohol, tobacco and cannabis are most significant cause of morbidity and premature deaths. The age of initiation of such substances use is progressively declining and several socio-demographic and behaviour factors are accountable with it. There is limited study available in substance use among youth in Nepal. Therefore, this study aims to identify prevalence of substance use and its associated factors among youth in remote area of Nepal.

Methodology

A cross-sectional study using self-administered was conducted among 445 youth students from karnali Technical School at Jumla district, Karnali Province. The factors associated with substance use were investigated through Poisson regression.

Results

Overall prevalence of substance use was 17.5%. About 12% drink alcohol, 14.4% smoke tobacco and 8.8 % of them use cannabis. Academic year ($\beta=0.53$, p =0.026), Father's occupation ($\beta=-0.44$, 0.04), peer pressure ($\beta=2.12$, p<0.001) and culture ($\beta=1.15$, p=0.01) are strongly associated with alcohol drinking. Only peer pressure was strongly associated with cigarette smoking ($\beta=2.21$, p<0.001) and cannabis use (=1.83, p=0.001).

Conclusion

Substance use is prevalent among youth students in rural area of Nepal. A prevention approach that prioritizes peer pressure, followed by culture, academic year and the parental occupation should be tailored in remote highland area of Nepal.

Keywords

Substance use, Tobacco, Alcohol, Cannabis and Youth

THEME 3: PUBLIC (POPULATION) HEALTH

2.3.1 Prevalence of Coitus during Pregnancy: A Descriptive Cross-sectional Study from Nepal

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Background

Pregnancy is a special period in a woman's life marked by spectrum of changes physically, mentally, emotionally and hormonally. These changes are also influenced by cultural, social, religious and emotional factors. Fluctuations in sexual desire during pregnancy are virtually normal. Pregnant women have many concerns during pregnancy, including the health of their baby, her husband's sexual interest, and their own body image. However, a pregnant woman's sexuality is highly individual. This is even more significant in a male dominated society where women are expected to behave shyly or if not remain silent regarding such taboo matters. In our Nepali society, coitus during pregnancy is taboo topic. It is cautioned, unexplored and unexplained. The purpose of this study is to assess prevalence of coitus during pregnancy in a tertiary care center in Nepal.

Methodology

A cross-sectional study was conducted in inpatient obstetrics of KIST Medical college after taking ethical approval. A total of 97 postpartum women were included using convenience sampling. Women staying with sexual partner during pregnancy were included and those who had contraindication to sexual intercourse were excluded. A semi structured questionnaire was made

in Nepalese language and women self-administered the questionnaire. Descriptive statistics were used.

Results

The prevalence of coitus in pregnancy was 36 (37.11%). In the first trimester 34 (35.05%), second trimester 13 (13.40%), third trimester 3 (3.09%) women were sexually active. The frequencies of coitus decreased as pregnancy progressed, about 70% women had coitus less than once a week in both first and second trimester. Women with education level of bachelors were more sexually active (64.29%). Likewise, multiparous women were more sexually active (42.31%).

Conclusion

The prevalence of coitus during pregnancy was less. Both the prevalence and frequencies of coitus decreases as pregnancy progress.

Keywords

pregnancy, intercourse, desire, sexual activity

2.3.2 Perception of medical students on use of Medical illustration in Medical education

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Introduction

Human beings are highly visual creatures and process information based on what is seen. Thus, visual aids like illustrations are fundamental to the learning process. Medical illustrations are scientifically informed observation, combined with technical and aesthetic skills to accurately portray medical subject and facts. It facilitates effective teaching and learning process, comprehensive understanding of concepts and serves as a crucial means of communication.

Methods

A descriptive cross-sectional study was conducted among medical students of KIST Medical College and Teaching Hospital after taking ethical clearance. Simple randomized sampling technique was used. Self-designed google forum questionnaire were administrated and 281 responses was recorded. Data entry and analysis was done by using Statistical Package for the Social Sciences version 26 and descriptive analysis was done.

Results

In our study reading and writing texts (59.8%) is still preferred learning methods. Participants believed that simplified learning process (39.5%) is the most striking benefit of medical illustration. Majority (87.6%) of participants use arts/ drawings only sometimes to clarify answers in exams. About 65% (n=134) participants use medical illustration to make projects and presentations while 41% used it in documentation of important clinical findings. About 58% finds medical illustrations very useful for comprehension and understanding the concepts. Majority believe that medical illustrations has made medical learning easier and should be widely promoted.

Conclusion

Teachers and students use medical illustration less extensively in medical education. Despite its limited use, majority still believed that medical illustrations is an effective means of learning and that its use should be promoted

Keywords

Medical education, medical illustration, medical students

2.3.3 Evidence based and collaborative research and learning agenda generation on adolescents' and youths' family planning and reproductive health for greater policy influence

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Background
Evidenced based research findings will continuously inform the policy makers to influence policy decisions. The purpose of this research and learning agenda (RLA) was to identify the knowledge gaps in adolescents' family planning and reproductive health (FP/RH) and summarize key questions for continuous learning that can be utilized by policy makers, researchers, and academicians.

Methodology
There is a knowledge gap in several aspects of adolescent and youth FP access and utilization in Nepal. Therefore, a landscape analysis of adolescent sexual and reproductive health programs implemented in Nepal between 2015 and 2020 with family planning and reproductive health outcomes and had targeted adolescent and young population in Nepal was executed. The landscape study recommended developing a RLA that will contribute to filling the evidence gap which led to the formation of 12 subject experts committee under the leadership of Family Welfare Division which jointly developed a RLA in youth and adolescent FP/RH utilizing findings and insights from the landscape analysis. The committee met three times in total. The RLA in adolescent FP/RH was developed in four steps: desk review, key informant interviews, workshop with relevant stakeholders, and expert consultation.

Results

The final questions and learning agendas are presented according to five dimensions of youth Sexual and Reproductive Health programming i) socio-ecological model, ii) positive youth development, iii) attention to equity, including marginalized and disadvantaged population, iv) gender transformative approach, and v) multisectoral efforts. Few questions are categorized into global evidence of high impact practices and cross cutting areas. The questions highlighted notify researchers and academicians of future areas of social science research that target the needs of adolescent and youth FP.

Conclusion

The RLA is a living document that government and stakeholders should regularly update as new evidence emerges and new questions arise from program implementation.

Keywords

Research and learning agenda, family planning, adolescent and youth programs, Nepal

2.3.4 Utilization of Post-Natal Care Services and its Associated Factors in Shahidnagar Municipality of Dhanusha District, Nepal

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Background

Despite the importance of Post-natal Care, postnatal period is generally the most neglected in developing countries like Nepal. It resulted increase in interpartum health complications and maternal deaths in developing countries. Thus, this study aimed to assess the utilization of PNC services and its associated factors among mothers of one-year children in Shahidnagar municipality.

Methodology

A cross sectional study was conducted among 215 mothers having the youngest child below one year. Among the 9 wards of Shahidnagar municipality, 4 wards were selected randomly. A systematic random sampling was conducted using semi-structured questionnaire to carry out data collection. Collected data were coded, filtered and entered systematically in Epi-data version 3.1. Descriptive analysis and Chi-square tests were carried out in IBM SPSS 26 to determine the association between participant's characteristics and PNC visit. Statistical significance was set at p-value <0.05.

Results

Among 157 participants who had heard of PNC, 86% had partial PNC visits and only 14% had PNC visits as per protocol. The most common reasons for not having PNC visit were unaware of PNC (65%) and financial issues (51%). Most of the mothers had received counselling on breast feeding and iron supplementation during PNC visit. However, only 9.6% and 13.4% of the mothers had received vitamin-A supplementation and counselling on BCG immunization during PNC visit respectively. Education level (OR=2.3, CI:1.2-4.4), knowledge of PNC (OR=5.1, CI:2.5-10.4) and type of healthcare worker during delivery (OR=4.3, CI:2.2- 6.5) were significantly associated with PNC check.

Conclusion

Although there was high PNC visit at least once, complete PNC visit as per protocol was low among mothers who were illiterate and unaware of PNC. This study found poor preference among mothers visiting for PNC in healthcare facilities where SBA service was unavailable. Thus, more focused awareness program to illiterate mothers and improvement in quality of care in government health facilities may increase the use of complete PNC.

2.3.5 How informed is Informed Consent? -Evaluating the quality of informed consent among surgical patients in a tertiary care hospital in Nepal

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Background

Informed consent-taking is a part of clinical practice that has ethical and legal aspects attached to it. This protects the autonomy of the patients by providing complete information regarding the rationale, modality, potential risks, benefits, and alternatives of the planned procedure to the patients. This enables the patients to make the right decision for themselves their care.

Methodology

This is a military healthcare institution-based prospective cross-sectional study conducted among patients undergoing major surgical procedures from July 2022 to October 2022. Ethical clearance was taken before the commencement of this study. A structured questionnaire was prepared and the collected data was refined in Excel and imported to SPSS for analysis.

Results

A total of 350 individuals of mean age 47.95 ± 16.057 years were part of this study. The majority of the respondents were married, Hindu by religion, literate, and family by beneficiary category. All of the respondents received and signed the consent form. About 77% of the respondents read

it completely and 95.4% of them reported that it was understandable. Majority of the patients did not know who was going to perform the surgery, the alternatives of the planned treatment, the benefits of the surgery, and the outcome of non-treatment. On the patient satisfaction scale, 16.28% of the participants agreed that they were satisfied with the informed consent-taking process.

Conclusions

Deficiencies in the informed consent-taking process were lack of dissemination of adequate information on the nature, duration, pros and cons, post-operative state, and alternative of the planned procedure. A well-structured format of the consent form that is specific to a particular procedure should be adopted and various alternatives to it must be disseminated to the patient party to improve the quality of the informed consent-taking process.

Keywords

Consent form; Informed consent; Surgical procedure

2.3.6 Experience of Respectful Maternity Care among Postnatal mother of Tertiary Level Hospital

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Background

RMC is a universal human right of every childbearing woman in every health system around the world. Many experience a lack of respectful and abusive care

during child birth across the globe.This study aims to assess women's experience of MC during childbirthamong postnatal mothers who had vaginal birth at Dhulikhel hospital.

Methods

Quantitative cross sectional study was conducted among 108 postnatal mothers who had normal vaginal birth at Dhulikhel Hospital using convenience sampling technique. Data were collected through an interview technique by using a validated tool containing 15 items each measured on a scale of 5. Statistical Package for Social Science (SPSS) version 20 was used for data analysis. Frequencies, percentage, mean score, standard deviation, chi- square test and Fisher's exact test were used to analyze Descriptive And Inferential Statistics.

Results

In total 38% of the mothers reported that they have experienced RMC services. They have also revealed that they have experienced disrespectful care in various forms such as being shouted (6.48%), being slapped (0.93%), delayed service provision (1.85%). Likewise, age of mother and parity was found to be significantly associated withabuse free dimension of RMC.

Conclusion

Even though RMC emphasize eliminating disrespectful and abusive environment from health facilities, 62% of the respondents perceived that they have not experienced overall RMC services. Therefore giving emphasis to creating awareness of health care provider on the standards and categories of RMC to avoid mistreatment during labor and childbirth were recommended.

Keywords

Abuse, Childbirth, Disrespect, Respectful maternity care

2.3.7 Evaluating quality of contraceptive counselling using Method Information Index: Analyzing NDHS 2016

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Background

Method Information Index (MII) is novice concept in quality of care in family planning. It measures the extent to which specific information is provided to help women to make informed choices. The objective if this paper is to analyze attainment of quality care received by the family planning users and socio-demographic factors relating to counseling.

Methodology

The study was secondary data analysis of Nepal Demographic and Health Survey (NDHS), 2016 dataset. Frequencies were calculated as a part of descriptive analysis and Chi-square test and multivariate inferential analysis was conducted. Complex samples analysis was done with the help of Statistical Package for the Social Sciences (SPSS) 23.

Result

There are three basic information included in the Method Information Index i.e., if the client was informed about side effects of method used, what to do for the side effects, and other methods that are available. One in every two respondents that are currently using modern method of contraceptives had not received all three information. Also, about 25% of respondents are getting family planning services from private sector and the analysis have shown that the counseling services from government sector have higher odds. Family planning users that are taking pills and

injectable are 60% and 50% less likely to receive higher MII score in comparison to LARC services.

Conclusion

Private sector and their contribution in supply of contraceptive commodities are increasing but the quality are still compromised. It is mandatory to address these gaps by setting minimum standards that will make equity in services provided by all sectors.

Keywords

Key words: Method Information Index, Private Sector, Contraceptives

2.3.8 Gender awareness among primary healthcare providers during service delivery in Lalitpur district

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Background

Gender plays an important role in achieving universal health coverage by addressing gender inequalities, gender stereotypes, and gender-related stigmas, which affect the experience of individuals in health care. Primary healthcare providers are the first point of contact of the health system for any population, so it is important to address gender at the primary healthcare level. The objective of the study was to assess gender sensitivity and the presence of gender stereotypes among primary healthcare providers of Lalitpur district.

Methodology

A cross-sectional; descriptive study was conducted among the primary healthcare providers in Lalitpur district. A validated scale, Nijmegen Gender Awareness in Medicine Scale (N-GAMS), with 3 sub-scores assessing gender sensitivity (GS) and gender stereotypes toward patients (GRIP) and doctors (GRID) was distributed to primary healthcare providers and SPSS ver. 25 was used for the analysis.

Result

In total, 139 primary healthcare providers with a median age of 40 took part in the study among which 55.7% had low GS, 56.1% had low GRIP, and 48.9% had high GRID. About 70% of them had not received any training relating to gender. GS was found to be significantly higher among women. A significantly lower GRIP was found with factors such as younger age, TV/Radio as a source of gender-related information, and joint family type. GRID was found to be higher in factors such as joint family type and household with men as decision-makers.

Conclusion

The study revealed that about half of the primary healthcare providers had low gender sensitivity and high gender stereotypes Most of them had not received any training on gender issues. Various factors seemed to Result in higher sensitivity and lower stereotypes. Focusing on these factors and integrating gender perspectives in any future training would Result in higher gender awareness among primary healthcare providers.

Keywords

Gender Awareness, Gender sensitivity, Gender stereotype, Primary Healthcare providers

2.3.9 Association between child maltreatment and nutritional status

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Background

Impact of child maltreatment in physical health are rarely discussed in literatures relating to developing countries. The traditional belief regarding child's hierarchy had put them into lesser priority for getting nutritious food. In addition, the abuse experienced by child have acted as additional factor contributing to poor nutritional status. This study will assess the effect of positive as well as negative disciplinary actions received by child and its impact on nutritional status.

Methods

The study was secondary data analysis of Multiple Indicator Cluster Survey, 2019. The survey sample was 2646 respondents for children that are age 3 and 4 years of age. Weight for height is considered as proxy for nutritional status. Frequencies were calculated as a part of descriptive analysis and Chi-square test and multivariate inferential analysis was conducted. Complex samples analysis was done with the help of Statistical Package for the Social Sciences (SPSS) 23.

Result

The under-nutrition status was found in 8.2% of children. Majority of children are punished physically and verbally. Negative disciplinary actions such as spanking, hitting or slapping child on bottom with bare hand, hitting or slapping child on the hand, arm or leg, shaking child, and calling them lazy, dumb and other names are more than 40%. In contrast, positive disciplinary action such as explaining why the actions are wrong was found to be only 14.2%. Similarly, the association among the physical abuse such as being hit or slapped on head, ears, or face was persistently significant in bivariate as well as multivariate analysis. The odds are as high as 100% for child being hit that are malnourished in comparison to child without trauma.

Conclusion

This analysis has added new dimension in nutritional status. The recommendation is to further investigating malnourished children for abusive history. This will support in relieving the insidious cause of under nutrition among children.

Keywords

Malnutrition, Child Maltreatment, Nutritional Status

2.3.10 Health Literacy and its Associated Factors among School Teachers in Lalitpur Metropolitan City

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Background

Health literacy is considered as a major indicator of health status and also an important pathway to reach towards the sustainable development goals. The health literacy of teachers is generally not given much importance even though it is a very crucial matter. This study aims to assess the level of health literacy and factors associated with it.

Methodology

A cross sectional study was conducted among 558 basic level school teachers of Lalitpur Metropolitan City using cluster sampling method. Health literacy was measured using European Health Literacy Survey Questionnaire- 47 items (HLS-EU-Q47). Based on score, respondents were divided into four levels of health literacy as inadequate, problematic, sufficient and excellent

as well as into two levels as limited and adequate. Factors associated with limited health literacy was determined by using univariate analysis and their associations were assessed using chi square test.

Results

With the response rate of 95.16 %, this study revealed that 53.9 % of teachers had adequate and 46.1 % had limited health literacy. Upon assessing the health literacy at four levels, 51.2% had sufficient, 43.5% had problematic, and 2.6 % each had inadequate and excellent health literacy. Being in age category of less than or equal to 45 years, teaching in private school, having educational level of bachelors or less having teaching duration of less than or equal to ten years, teaching non health related subjects, teaching in lower grades and no participation in health training in past six months were the factors which were found to be associated with limited health literacy ($p < 0.05$)

Conclusion

The high percentage of limited health literacy among school teachers in the Lalitpur Metropolitan City should be brought to the attention of the policy makers in education and health sectors. The factors related to limited health literacy should be considered while designing intervention programs.

Keywords

Health Literacy, HLS-EU-Q47, Basic level school teachers

2.3.11 Isolation of Lactic Acid Bacteria from Grape Fruit: Antimicrobial effect and Probiotic Potential

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Background

Grapes and their derived products, wine in particular, widely consumed in the all over the world. The aim of this study was to isolate lactic acid bacteria from the six variety of grape bunch namely Chenin blanc, Sauvignon blanc, Zinfandel, Cabernet Sauvignon, Shiraz, Chardonnay cultivated in Nashik, Maharashtra in order to assess their ability to inhibit the growth of their most widespread fungal contaminant.

Methodology

Antimicrobial activity of 24 isolates was investigated and potent isolates with antimicrobial activities were screened out and studied for their probiotic properties like acid tolerance bile salts, temperature tolerance, heat and pH sensitivity and bacteriocin production properties.

Results

Selected strains (SBN 7), (SBN11), (SBN17), (SBN 21) and (SBN23) were identified as *Pediococcus pentosaceus*, *Lactobacillus plantarum,, Lactobacillus rhamnosus,Enterococcus* spp, *Lactococcus* spp showing a good antimicrobial activity against *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Escherichia coli*, *Bacillus cereus*, *Aspergillus niger*, *Elsinoe ampelina, and Aspergillus carbonarius*.

Conclusion

This study provides evidence for the control of black *Aspergillus* growth in grape and having antimicrobial effect and probiotic potential.

Keywords

Lactic acid bacteria, Grape, Plant probiotics and antimicrobial activity

2.3.12 Unmet needs for adolescent and teenage pregnancy in Nepal

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Background

Teenage pregnancy is a critical issue that affects the well-being of women and is difficult to address due to the unmet needs of contraceptives among adolescents. Adolescent women face intense pressure to keep their contraceptive use and choice a secret due to the stigma associated with contraceptive use during this period. This study aims to address the need for contraceptives among adolescent women to prevent teenage pregnancy and improve their quality of life.

Method

We analyzed data from the Nepal Demographic and Health Surveys datasets using descriptive analysis to explain the results. We also used preliminary findings from NDHS 2022 and the annual report of the Nepal Planning Commission to compare the results with Sustainable Development Goal targets.

Results

In NDHS 2022, 31% of women aged 15-19 reported an unmet need for family planning, which is higher than the national average of 21%. The SDG milestone for 2022 was 19%, which is 63% higher among adolescent women. Unmet need for family planning is higher among women in the lowest quintile and in Dalit and Muslim ethnic groups. The prevalence of teenage pregnancy in Nepal in 2022 was 14%, with higher rates among women in Dalit and Muslim ethnic groups, the lowest/lower wealth quintile, and in Madhesh and Karnali provinces.

Conclusion

Addressing adolescent pregnancy and low contraceptive use among sexually active young women in Nepal requires concerted efforts that focus on poor young women in Dalit and Muslim ethnic groups, with a particular emphasis on Madhesh and Karnali provinces. More effort is needed to explore ways to inform adolescent women about their contraceptive choices to reduce the burden of unmet needs and teenage pregnancy in Nepal.

Keywords

Unmet need, teen age pregnancy, contraceptive

2.3.13 Factors Associated with Utilization of Institutional Delivery Service among Women of Rural Mugu: A Community Based Cross-sectional Study

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Background

One of the main strategies that have been proven to lower maternal and infant morbidity and mortality is institutional delivery. Nepal has started a number of initiatives to improve institutional delivery. Despite this, regional differences in institutional delivery still exist. Consequently, the purpose of this study was to assess the proportion of institutional delivery and the factors that influence it among women in Mugu.

Methodology

Cross-sectional study was carried out in Mugum Karmarong Rural Municipality and Chhayanath Rara Municipality of Mugu District. During the study period, 269 mothers were selected using

the systematic random sampling technique. Pretested semi-structured questionnaire was used to get the information. The data were entered in Epi data 3.1 and analysis was done on SPSS 20. Descriptive statistics and inferential statistics by chi square test P-Value (<0.05), odds ratio at 95% CI were used.

Results

Out of 269 participants, 88.5%% had delivered in the health facilities. The factors which were significantly associated with the institutional delivery were ethnicity (P-value 0.023; OR 0.42 95%CI, 0.195-0.904) distance to health facilities (P-value 0.000; OR 4.452 95%CI, 2.057-9.637) availability of skilled health workers (P-value 0.003; OR 16.345 95%CI, 1.437-185.807) knowledge on protocol wise ANC checkups (P-value 0.025; OR 2.367 95%CI, 1.098-5.101), overall all knowledge level regarding ANC and obstetric care (P-value 0.016), attitudes towards place of childbirth (P-value <0.001, OR 32.045 95%CI, 8.080-127.095), birth preparedness practices during pregnancy (P-value 0.012; OR 3.128 95%CI, 1.233-7.933) and transportation allowances for institutional delivery (P-value <0.001; OR 24.495 95%CI, 9.910-60.546) were found to have significant association with institutional delivery.

Conclusion

This study found high proportion of institutional delivery and is significantly associated with various factors including ethnicity, distance to health facility and quality of health care services. Additionally, Knowledge on ANC checkups, Birth Preparedness Practice (BPP) during pregnancy and transportation allowance were also important for promoting institutional delivery.

Keywords

Institutional delivery, "Factors associated" AND "institutional delivery", "Institutional delivery" AND Nepal

2.3.14 Self- Reported Emotion and Behavioral Problems among Adolescents, Kathmandu

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Background

Adolescents are highly vulnerable to different types of emotional and behavioral problems which affect academic and social life. Hence the objective of this study was to find out emotional and behavioural problems among adolescents.

Methods

Descriptive cross-sectional study design with non-probability, convenience sampling technique was used. All adolescent students (n=275) studying at 7-11 grades of five private schools of Kathmandu were involved in the study after obtaining the assent forms. The self-report Strength and Difficulties Questionnaire (SDQ-S) was used to collect data. Data were analyzed using SPSS (20.0). Descriptive statistics was used to analyze the prevalence of behaviour problems of adolescents. Similarly, the Chi-square test was used to measure the association between behavioural problems and selected variables at a 95.0% confidence interval.

Results

The mean age of the participants was13.66 (SD± 1.13) years where 53.1% were female. There were 7.3% of adolescents had abnormal levels, and 13.8% of adolescents had Borderline levels of

total difficulties. Emotional problems, conduct problems, hyperactivity/ inattention problems, peer relationship problems, and pro-social behaviors were 6.5%, 12.0%, 3.3%, 5.5%, and 1.5% respectively had abnormal levels of total difficulties. Father's occupation was significantly associated with behavioural problems among adolescents (p=0.020), and 15.3% of adolescents had a significant impact on their daily life, i.e. home, friendship, classroom, or leisure activities, due to emotional and behavioural difficulties.

Conclusion

Emotion and behavioral problems are quite prevalent among adolescents and have significant adverse impacts on their daily life.

Keywords

Adolescents, Behavioral and Emotional problems, Self-report, SDQ

2.3.15 Nutritional knowledge and dietary practice among reproductive aged (18-45) women of Rainas municipality, Lamjung. A descriptive Cross-section Study

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Introduction

Nutrition knowledge refers to concepts and processes related to nutrition and health including knowledge of diet and health, diet and disease, foods representing major sources of nutrients, and dietary guidelines whereas food consumption or eating habits also can be stated as why and how people eat. Dietary practice is essential to know the nutritional knowledge of people. Healthy eating pattern helps to boost immunity whereas unhealthy eating behavior may lead to cause

malnutrition, obesity, and other chronic disease and main aims of the study to determine the nutritional knowledge and practice among aged women of Rainas municipality in Lamjung district.

Methodology

A descriptive cross-sectional study was conduct among 233 people. Ethical approval was taken before data collection. A semi structured questionnaire was prepared whereas face to face interview was done for information collection. Convenient sampling was adapted for area selection and respondent selection. The collected data were coded and entered in epidata and then exported to SPSS version 26. Descriptive and inferential statics were used in analysis.

Result

The knowledge was calculated in mean score, where 55.5% had good knowledge while 44.5% have poor knowledge about nutrition. Similarly, practice was also calculated in mean score, where more than half of the respondents (56.7%) have poor food practice while 43.3% have good practice. There was also a significant relationship between the dependent variables, knowledge, and practice i.e., p-value 0.004.

Conclusion

The study showed that the knowledge level of respondents was found to be good whereas more than half of the respondents had poor practice. Various factors such as educational status, family type, occupation and family monthly income contribute for nutritional knowledge and food practices. Unavailability of food, food myths and lack of knowledge regarding nutrition had affect the food practices.

Keywords

Nutritional knowledge, practice, and reproductive aged women

2.3.16 The effects of menstrual hygiene management education on girls' school participation, stress and self- efficacy in Madhesh province, Nepal

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Backgrounds

Menstruation is a natural phenomenon reflecting the beginning of women's reproductive life. Managing menstruation in school has been a challenge for school attending girls, associated with negative emotion such as stress, anxiety, and stigma. Save the Children, Nepal has been working for promoting menstrual hygiene related knowledge and practices and providing skills in preparation of homemade sanitary pads in schools of Madhesh province, Nepal.

Methodology

A baseline study was conducted in 718 schools girls of Mahottari and Sarlahi districts of Madhesh Province,Nepal in November,2022. A total of 12 schools were purposively selected from 6 different local levels of Madesh Province. Participants were taken from grade 6 to 8 and were stratified into 2 groups (386 in intervention and 332 in control) where in the intervention's groups, Save the Children Nepal will implement its Menstruation Hygiene related interventions. This pre-test approach with comparison group attempted to gather information in girls' menstruation-related school engagement, stress, and self-efficacy (MENSES) by adopting the validated Menstrual Related – School Participation, Stress and Self-Efficacy (MR-SSS) tools.

Results

A total of 46.9% of the girls had studied on menstruation in their schools. Only 3.5% (CI=2.1-4.8) of the girls participated properly in schools during menstruation. 93.7% (CI=92.0 - 95.5) of the girls experienced stress while managing menstruation and 69.9% (CI= 66.6 -7 3.3) of the girls reported low self-efficacy during the menstruation at schools. In this baseline study, higher wealth index (OR=1.4, CI=0.9-2.0) and information provided on menstruation in schools (OR=2.8, CI=1.9-3.9) were positively associated with higher self-efficacy of girls.

Conclusion

Managing menstruation in schools can be challenging for school going girls especially in lower-income populations with limited access to facilities and materials supplies related to menstruation. Effective educational intervention in such school settings can bring positive impact in menstruation related outcomes.

Keywords

Menstruation, Menstruation hygiene management, participation, stress, self-efficacy, Nepal

2.3.17 Women's experience of birth companion in facility based birth setting

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Background

Despite the proven benefits of continuous birth support, the majority of health facilities do not acknowledge women's perspective of birth companions. The aim of the study was to extend the understanding of the phenomena, of women with birth companions in facility based birth settings.

Methodology

A phenomenological research design utilized in-depth interview guidelines for data collection using an audio recorder, and field notes. One to two sessions of in-depth interviews (20-30 minutes) of 8 postnatal women who had physiological birth were recruited through purposive sampling. Graneheim and Lundman's (2004) content analysis was used for data analysis which drew four major themes from 51 codes, 33 sub-categories, and 16 categories.

Results

Four themes; Support Person, Type of support, Experience with staff in presence of a companion, and Positive birth experience were generated. The husband is mostly desired companion, but the majority of women were dissatisfied with the lack of opportunities to make a decision of choice, verbalized as imposed decision. Women appreciated physical, emotional, and informational support from companions. The birth experience is positively influenced by receiving a companion of choice in the aspect of the plan for the next pregnancy and utilizing the same service center in the future. Improper communication in regard to frequency, timing, pitch, and tone, as unsupportive staff attitudes, and behaviors make women feel neglected throughout the birth process.

Conclusion

The result of the study found that almost all women desire a birth companion. The mothers believe birth events influence physical and mental health, and the presence of a birth companion is effective when the need is addressed and self-decision-making is enforced, thus reducing the felt discrepancy in care during birth.

Keywords

Birth companion, childbirth experiences, childbirth support, facility based birth

2.3.18 Barriers to safe abortion services among young women in Makwanpur district

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Background

Due to the high number of unintended pregnancies, induced abortion is commonly practiced globally among women of reproductive age. Between the years 2010 and 2014, approximately 45% of all abortions were unsafe which significantly contributed to the global burden of maternal mortality. Health facilities providing safe abortion services (SAS) are only 19.2% due to which unsafe abortion practices are widely prevalent in Nepal particularly, in remote areas. This study aims to develop evidence-based and effective SAS through the identification of the barriers that hinder access to SAS.

Methods

Mixed method was applied to conduct this study. This paper is only presenting the qualitative finding of the study. Focused group discussions and In-depth Interviews were conducted among young women aged 18-34 years and SAS providers in the Makwanpur district. Ethical approval was obtained from the NHRC and the confidentiality of the respondents was maintained.

Results

Six major thematic barriers were found in accessing SAS by young women. Namely, the low awareness level of legalization and free availability of SAS, lack of SAS in remote areas, inadequate capacity of SAS providers, poor quality of available SAS, stigma related to SAS, and direct and indirect costs in reaching free SAS.

Conclusion

In Nepal, there has been remarkable progress in the areas of sexual and reproductive health rights (SRHR). The availability and accessibility of SAS are recognized as an essential aspect of women's SRHR in Nepal. However, we found many barriers to accessing SAS by young women. Expanding the coverage of SAS services requires targeted advocacy efforts in specific strategic areas. The major recommendations of this study to avoid barriers to SAS are ensuring age-specific

comprehensive sexuality education, easy access to SAS in remote areas and nearby households, coaching and mentoring to the SAS health workforce, and multisectoral engagement in SAS including faith-based leaders.

2.3.19 Gender and caste inequalities in primary healthcare utilization by under-5 children in rural Nepal: Provider perspectives on socio-economic determinants, patient experience, and the potential role of implicit/unconscious bias

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Introduction
Efforts to address health inequalities in Nepal have not eliminated disparities in service utilization in rural areas based on caste and gender. Disadvantaged groups tend to delay healthcare seeking for their children or not seek it at all due to socio-economic determinants such as economic status, education level, and cultural norms. Negative patient experiences and implicit or unconscious bias among healthcare providers can also contribute to these disparities. This study aimed to explore provider perspectives on two main areas: (i) why inequalities in service utilization persist and (ii)

their knowledge and understanding of the role of patient experience and implicit or unconscious bias.

Methods

A three-stage iterative qualitative study was conducted, involving two rounds of in-depth interviews and a training session with healthcare staff from 22 rural health posts in Nepal. The interview transcripts were analysed using a reflexive thematic approach in relation to the study's aims.

Results

Healthcare providers had a high level of understanding regarding the cultural, educational, and socio-economic factors behind the inequalities in healthcare utilization in their communities. However, there was less knowledge and understanding regarding the role of patient experience, and there was no recognition at all of the concept of implicit and/or unconscious bias.

Conclusion

It is highly likely that implicit or unconscious bias affects provider behavior in Nepal just as it does in other countries. However, currently, there is not a culture of thinking about the patient experience and how it might impact future utilization of health services. Providing training on implicit or unconscious bias for health students and workers would help create greater awareness of unintended discriminatory behaviors. This, in turn, may play a part in improving the patient experience and increasing healthcare utilization, particularly among disadvantaged groups.

Keywords

implicit bias, health care workers, under-five children, Nepal

2.3.20 The health seeking behaviour during pregnancy and feeding practice of mothers of Humla and Bajura District of Nepal: A Mixed-method Study

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Background

In Nepal, maternal and child health has shown considerable improvement in recent decades. Despite this, disparities in access to health services persist based on factors such as women's socioeconomic status, educational attainment, and residency. This study aims to explore various dimensions of maternal and child health in the districts of Humla and Bajura by assessing the health-seeking behaviors and feeding practices of mothers with under 5 children.

Methodology

This study employed a mixed-method approach, utilizing both quantitative data from 724 women with children under the age of five, and qualitative information from eight key informant interviews with stakeholders in Humla and Bajura districts of Nepal. While the primary focus of the study was quantitative research, the qualitative data served to augment the findings.

Result

Most of the women in our study chose to receive ANC and PNC services in nearby health centers, indicating that they were aware of these services. However, only 50% of the women who took part in our study gave birth in health facilities, 97.52% of mothers practiced exclusive breastfeeding, started supplementary feeding after six months of age, they often fed rice, lentils and super flour. Mothers, however, in general were unaware about the nutritional values, types of suitable foods for their children and required frequency of feeding.

Conclusion

Taken together, these remote areas of Nepal lack an adequate number of health facilities, transportation, and other basic infrastructure necessary for accessing health services. Mothers demonstrated some awareness of available health facilities but were unable to access them due to various socioeconomic factors. Repeated awareness and training programs should be implemented

to promote maternal and child health and emphasize the importance of education. The government should provide sufficient support to health posts, as they are the most accessible option.

Keywords

Maternal and Child Health, Nutrition, Under-five children

2.3.21 Comparison of Binocular Vision Status Between Spectacles & Spherical Equivalent Soft Contact Lens Wear in Low Myopic Astigmatism

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Background

The accommodative and fusional vergence parameters are changed while wearing spherical equivalent corrected soft contact lenses instead of spectacles. Usually, binocular near vision-related problems is encountered in our clinical practice in a patient wearing soft contact lenses due to inappropriately prescribed contact lenses. So, measurement of the accommodative and binocular vision is a mandatory clinical assessment before prescribing contact lenses.

To compare the binocular vision status between spectacles & spherical equivalent soft contact lens wear in low myopic astigmatism.

Method

All the subjects underwent a thorough optometric examination and a complete binocular vision evaluation was performed with spectacles and contact lenses on the same day in a group of 36 participants. The accommodative amplitude and accommodative facility, stereo acuity, cover test, horizontal phoria, near the point of convergence (NPC), negative relative accommodation (NRA), positive relative accommodation (PRA), positive fusional reserve, and negative fusional reserve

were compared with myopic spectacles and spherical equivalent corrected contact lenses in these subjects.

Results

Statistically significant differences were found with the use of soft contact lens in comparison to the spectacle: a higher value of NPC (MD; -0.36±0.76, p=0.007), lag of accommodation (MD; -0.11± 0.31, p=0.03) and PRA (MD; 0.35± 0.16, p=0.035).

Conclusion

The NPC, lag of accommodation, and PRA were changed while wearing contact lenses although other parameters did not show statistical significance. These findings imply that; the spherical equivalent corrected soft contact lens could not be prescribed even in a patient with low myopic astigmatism before screening all the binocular vision parameters.

Keywords

Accommodation, Convergence, Fusional Vergence, Spherical equivalent, Contact Lens

2.3.22 Relationships Between Low Birth Weight, Postpartum Depression, and Mother-Infant Bonding During the First 6-Months of the Postpartum Period in Nepal

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Background

Although the existing literature highlights the risks of negative health and developmental outcomes among low birth weight (LBW) infants, little is known about whether maternal depression during the postpartum period is associated with impaired mother-infant bonding among LBW children. Thus, the purpose of this study is to examine the relationship between LBW, postpartum depression, and mother-infant bonding within 6 months of childbirth in Nepal.

Methods

This cross-sectional multisite study used the convenience sampling technique to enroll 128 mothers of LBW/preterm and normal birth weight infants from the immunization clinics at two tertiary-level hospitals in Kathmandu, Nepal. Data were collected via a semi-structured interview with participants using structured questionnaires. Study measures include socio-demographic variables, perinatal factors, and four Likert-style questionnaires. Multiple regression models in SPSS are conducted to test the hypothesis.

Results

The preliminary result indicates that birth weight is significantly correlated with postpartum depression (r =-.17, p<.05), and postpartum depression is significantly correlated with mother-infant bonding (r = .35, p<.001). Regression analysis suggests that postpartum depression is significantly associated with mother-infant bonding after controlling for a range of perinatal and sociodemographic factors. Thus, LBW serves as a predictive risk factor for postpartum depression, and higher levels of postpartum depression are significantly associated with higher mother-infant bonding issues.

Conclusions

These findings support the need for future evidence-based interventions to enhance positive birth outcomes and support for postpartum mothers to reduce postpartum depression which is foundational for positive mother-infant bonding relationships during the critical stage of infant development.

Keywords

Low birth weight, postpartum, depression, mother-infant bonding

2.3.23 Knowledge and practice on complementary feeding among mothers having children of 6 to 24 months of Mangalsen Municipality, Achham

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Background

Infants and young children are more susceptible to malnutrition after the age of six months, when breast milk alone can no longer satisfy all of a child's nutritional needs so the complementary feeding should be initiated.

If all mothers were aware of complementary feeding, they can stop the effects of under nutrition. The study aimed to determine the status of knowledge and practice of complementary feeding among mothers having 6 to 24 children.

Methodology

Cross-sectional study design was carried out in Mangalsen Municipality, Achham. Systematic random sampling technique was adopted. Sample size was. Semi-structured questionnaire was used as tools for data collection. Collected data was entered and cleaned by using Epidata 3.1. Data was analyzed though SPSS 16.Data was examined by using frequency and percentage calculations and Chi-square test was used to find out the association.

Results

More than half (51.2%) of daughters and 1.3% sons were initiated complementary feeding before 6 months of age. Only 51.9% mothers had good knowledge and 44.8% have good practice on complementary feedings. The practices of minimum meal frequency, minimum dietary diversity and minimum acceptable diet were 88.3%, 55.8% and 51.9% respectively.

Mother's education had statistically significant association (p<0.05) with level of knowledge. Ethnicity, mother's education, father's occupation and family monthly income had association with minimum dietary diversity. Similarly, ethnicity and mother's education had association with minimum acceptable diet (p<0.05). Ethnicity and mother's education had association with level of practice (p<0.05).

Conclusion

Knowledge on complementary feeding had association with education, occupation of mother and monthly income. Similarly, practice of mother's on complementary feeding had association with ethnicity, number of children and parents education. If mothers have good knowledge on complementary feeding than there is a good practice as well.

Dalit mothers and lower level education status mothers had poor knowledge and practice in complementary feeding. So, there is needed to empower and aware them.

Keywords

Knowledge, Practice, complementary feeding, minimum acceptable diet, Minimum dietary diversity, minimum meal frequency

2.3.24 Behavioural risk factors of cardiovascular disease among adolescents of secondary level school in a sub-metropolitan city of Nepal

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Background

Cardiovascular diseases (CVDs) are the leading cause of death and disability globally, where one-third of adolescents are affected. There is plenty of evidence that behavioural factors like physical inactivity, unhealthy diet, smoking, and alcohol use are major risks associated with CVDs among adolescents/school-going children. The main aim of this study was to assess the prevalence of behavioural risk factors of cardiovascular disease among adolescents of secondary-level schools in Tulsipur Sub Metropolitan City, Nepal.

Methods

This was a school-based cross-sectional study among 361 adolescents of grades 11 and 12 between the ages of 16 and 19. The school was selected by using a stratified proportionate sampling method. Data were collected through a self-administered structured and validated questionnaire containing socio-demographic characteristics, behavioural risk factors of CVDs and respective parent's information. Data were analysed using both descriptive and analytical statistics.

Results

The most prevalent behavioral risk factor was the consumption of calorie drinks (99%), followed by sedentary behavior (60%). The third most prominent behavioral risk for CVD was insufficient fruit and vegetable intake (57%), followed by physical inactivity (35%), intake of processed food high in salt (33%), refined vegetable oil use in meal preparation (19%) and added salt intake (15.5%) where sedentary behavior was associated with the education system.

Conclusions

This study provided evidence of the high prevalence of CVD risk factors among adolescents in Nepal. It demands an urgent need to effectively design appropriate interventions in household and school settings to address the risk factors at the municipal level of Nepal.

Keywords

2.3.25 Perceived barriers for accessing health care services among people with visual impairment in Biratnagar, Nepal

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Background

The prevalence of blindness is 0.9% in Nepal in 2021. Persons with visual impairment (VI) tend to underutilize healthcare services due to known and unknown barriers. The study objective is to explore the perspectives of VI people, their relatives and health service providers on barriers for accessing health services among people with VI in Biratnagar.

Methodology

Qualitative and explorative cross-sectional research method was adopted. Purposive and snow ball sampling was done. VI people were located from three eye hospitals of Biratnagar, disability organizations and health service provider from government health facility. Total 18 in-depth interviews (IDI) and eight key informant interviews (KII) was conducted. Interview guidelines were adopted from study done by Van Hees and colleague. All recordings were transcribed, reviewed, and a content analysis with deductive approach to identify barriers for accessing care according to the three Delays model, delay in seeking, reaching and receiving care was used. The supply- and demand-side model was used to describe perceived strategies to overcome barriers. The themes were coded, organized and summarized.

Results

The results from IDI and KII were very similar. Awareness about health education and health service, behaviour of VI person and that of family and society and financial issues were major barriers for delay in seeking care. The difficulty in transportation and not VI friendly roads were major barriers for delay in reaching care. The delay in receiving care consists mainly of no VI friendly infrastructure, high charge for treatment and long queue in the government hospital.

Conclusion

Awareness and Behaviour of VI person and society, difficult roads and transportation and complex management of health care services were the perceived barriers by VI person and health care service providers in Biratnagar. The barriers could be addressed by self-dependency of VI persons and VI friendly environment and both of which ultimately address the three delays in Biratnagar and Nepal.

Keywords

Perceived barriers, Visual impairment, Health care services, three delays

2.3.26 Bacteriological profile and semen quality in Nepalese men with potential infertility

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Infection of male urogenital tract or male accessory glands affects fertility potential causing the male infertility. However, status of bacteriospermia and associated infertility among Nepalese men

is still elusive. The present cross-sectional study aims to understand bacterial infection in semen of infertile men, and the association of seminal bacteria with semen parameters related to fertility potential. The semen samples were collected from the male partners of couples consulting for fertility problems in a fertility center of Nepal. Culture based and 16S rDNA metagenomic sequencing approach were applied for bacteriological analysis. Semen parameters were analyzed immediately after the liquefaction following WHO guidelines, 2021. In this presentation we discuss abnormal semen parameters among 73.7% individuals in respect to sperm concentration, motility, morphology and vitality. Culture based method revealed that 25.4% of samples had bacteriospermia with predominant *S. aureus* and *Corynebacterium* species. However, 16S rDNA metagenomics sequencing of total DNA from abnormal semen samples showed higher percentage of *Acinetobacter* spp, *Fenollaria* spp, *Enterococcus* spp, *Ezakiella* spp, *Gardnerella* spp, *Neisseria* spp, *Corynebacterium* spp, *Veillonella* spp, *Sneathia* spp. We observed that semen with bacteriospermia had lower volume, concentration of sperms, percentage of total sperm motility and vitality. Our results provide comprehensive semen bacteriological profile of potentially infertile men and compared with semen parameters, which forms not only a baseline data on bacteriospermia of infertile men in Nepal but also helps in the treatment of infection induced male infertility.

Keywords
bacteriospermia, semen, infertility, sperm

2.3.27 Mother's perception and knowledge on maternal mental health and undernutrition in children: A qualitative study

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Background

Maternal mental health (MMH) plays a significant role in a child's physical and mental growth. Recent studies have shown a significant association between maternal mental illness (MMI) and child undernutrition. To date, only two studies have been conducted in Nepal to explore the association between maternal mental health and child undernutrition. However, none of the studies focused on understanding mothers' perceptions. Recognizing the importance of a mother's mental health on a child's nutrition, this study explored mothers' understanding and perception of MMI and its association with undernutrition in children.

Methodology

Focused Group Discussions (FGDs) were conducted with mothers from Lumbini Cultural Municipality, Rupandehi. A total of five FGDs were conducted where a total of 37 mothers participated. Thematic analysis was conducted according to Braun and Clarke's guide to analyse the data and determine common themes. Also, a sociogram was used to understand the group dynamics and explore if and how it affected the themes.

Results

Four major themes were identified from the FGD analysis: *1. Knowledge and perception of MMH, 2. Risk factors of MMH, 3. Impact of MMH, 4. Measures to mitigate MMH issues.*
Mothers from different sociocultural backgrounds, educational levels and age groups participated in this study. MMI was poorly understood by the mothers, mostly limited to psychosis. Mothers believed MMI were almost non-existent in their community. And there was a perception that it was largely a social problem (lack of support for the mother) rather than a health problem. Most of the mothers identified not having a male child as a significant risk factor for MMI. Only a few mothers did understand the implications of poor MMI on a child's nutritional status.

Conclusion

The findings imply an evident lack of knowledge on the subject among mothers. There is a need to increase awareness regarding MMH issues, its identification as a health problem, recognition, and de-stigmatisation.

2.3.28 Simulation-Based Mentorship Program to improve knowledge and skills on essential obstetric and newborn care among nurses in Nepal

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Background

In Nepal, there is a critical gap in knowledge and skills of Maternal and Newborn Health (MNH) service providers. One Heart Worldwide designed a Simulation-Based Mentorship Program (SBMP) in collaboration with the Family Welfare Division to bridge the gaps in knowledge and skills of nurses working in birthing centers by providing regular mentorship on 7 thematic areas of essential obstetric and newborn care using simulation based low dose high frequency approach. This study presents the initial changes in knowledge and skills of the nurses in two districts, i.e. Udayapur and Dolakha.

Methods

The study used a mixed method, quasi-experimental design. A total of 56 birthing centers (28 intervention and 28 control) were selected. All the nurses working in the selected birthing centers were included in the study. A structured multiple choice questionnaire was self-administered for knowledge assessment, whereas a simulation based observation checklist was used for assessing

the skills of the nurses. Similarly, 22 in-depth interviews were also conducted. Paired t-test and Difference in Difference (DID) analysis were used for data analysis.

Results

There was a significant increment in mean skills score from 44.9% to 90.4%, and mean knowledge score from 67.9% to 88.6% among the intervention group. The DiD analysis revealed a 14.8% difference (adjusted) in mean knowledge score (p<0.01) with an increment in score by 20.7% in the intervention group and 6% in the control group. The IDI participants reported updated knowledge, increased confidence, improved case management skills, better service delivery, and risk stratification after the implementation of the program.

Conclusion

These initial results suggest, SBMP was effective in improving the knowledge and skills. Additional assessments are planned with the same cohort, to assert longer-term retention, which, if proven positive, would suggest the SBMP to be a valid alternative for training MNH service providers to provide quality perinatal care.

Keywords

Mentorship, simulation, SBMP

2.3.29 Satisfaction in use of menstrual cups among its users in Nepal

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Background

In many resource-poor countries, girls and women rely on unhygienic and harmful materials like old cloths, tissue paper, or cotton and wool pieces to manage their menstrual bleeding. Though menstrual cups are considered better alternatives than sanitary pads and tampons from different aspects, its use have not been promoted well due to limited evidence of feasibility and satisfaction. Adequate studies have not been conducted in Nepal to assess its acceptance. This study aims to fill that gap by measuring the level of satisfaction among menstrual cup users in Nepal which can provide valuable insights for improving menstrual hygiene practices in low-resource settings.

Methodology

This was a cross sectional descriptive study conducted from March to April 2022 assessing satisfaction levels on the use of menstrual cups in 109 Nepali females who used it for at least three months. Participants were accessed through snowball technique and web-based self-administered questionnaire was sent via social media .Satisfaction was measured calculating mean score of five different aspects in menstrual cup use (comfort, ease of insertion, ease of removal, leakage and overall satisfaction).

Results

The mean overall satisfaction with the use of menstrual cup was 6.15±1.061. Users were least satisfied with ease of removal (5.10±1.677). Satisfaction had a significant negative correlation with time required to reuse the cup [r=-0.293, P=0.002]. Satisfaction was significantly higher in women who did not experience leakage, vaginal irritation, vaginal pain while inserting the cup, pelvic pain and those who did not experience any problem. There was no significant correlation found between cost of the cup and overall satisfaction [r=0.081, P=0.4]

Conclusions

This study result explored that self-directed menstrual cup users in Nepal are satisfied with its use to manage menstrual blood. Stakeholders can scale up menstrual cups as an alternative to replace current methods like disposable or reusable sanitary pads and tampons since it is beneficial for all menstruating women.

2.3.30 Sexual harassment and its association with social anxiety disorder and depression in adolescent girls students in Kathmandu metropolitan city.

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Background

Sexual harassment can take many forms but is usually divided into physical, verbal, or non-verbal forms and can take place in person (offline) or through media such as the internet or phone (online). Apart from being an issue of public health concern, SH is considered a severe violation of the human right and has thus received growing attention globally. Increased health risks have been documented among those facing SH that relate to multiple body systems, including the nervous, cardiovascular, gastrointestinal, genitourinary, reproductive, musculoskeletal, immune and endocrine systems.

Objective

The major objective of this study is to assess the prevalence of offline and online sexual harassment and its association with social anxiety disorder and depression in adolescents' girls' students.

Methods

A cross-sectional study was conducted among 616 school going adolescent girls of grades 9-12. A standardized questionnaire was used to collect responses on socio-demographic and online and offline harassment along with depression and social anxiety disorder. Chi-square test was used to determine the association between the variables.

Results

The prevalence of offline harassment and online harassment was found to be 68.5% and 99.2% respectively. The prevalence of very severe social anxiety was 3.6% and severe depression was 11%. Offline sexual harassment was significantly associated with social anxiety disorder and depression in adolescent girls student but online sexual harassment was not associated with depression and social anxiety disorder.

Conclusion

The study shows that about 3/4 th of the respondent were sexually harassed in person and almost every school going adolescent girls were sexually harassed online. This is higher than similar studies done in Nepal in the past indicating an increasing trend especially in online harassment in girl.

Keywords

Keywords: Offline and Online sexual harassment, depression, social anxiety disorder.

2.3.31 Prevalence of leucopenia and thrombocytopenia in patients with dengue infection presenting in emergency department in tertiary center in Lalitpur district of Nepal

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Background

Dengue viruses cause either symptomatic infections or asymptomatic seroconversion. Symptomatic dengue has a wide clinical spectrum ranging from self-limiting infection to severe manifestations, mostly characterized by plasma leakage with or without hemorrhage. The severity

of the disease will usually only be apparent around defervescence which often coincides with the onset of the critical phase. During this transition, patients with increased permeability, may manifest the warning signs mostly due to plasma leakage. Monitoring of warning signs and clinical parameters is important to recognize progression to the critical phase. Progressive leukopenia followed by a rapid decrease in platelets usually precedes plasma leakage. Rapid and progressive decrease in platelets to about 100,000 may be the earliest sign of plasma leakage.

Methodology

A cross-sectional study was conducted among 252 patients with dengue, confirmed by serological testing against dengue specific NS1 and IgM by enzyme-linked immunosorbent assay from September to November 2022 presenting in emergency department of KIST Medical College after obtaining ethical approval. Dengue was categorized as dengue without warning signs, dengue with warning signs, and severe dengue. Haematological parameter was recorded by reviewing patients. A descriptive statistical tool and chi-square test were carried out.

Results

Dengue without warning signs was present among 166 (65.87%), while dengue with warnings signs and severe dengue was present among 68 (26.89%) and 18 (7.14%) patients. Leucopenia (<4000 cells/cm3) was present among 163 (64.68%) patients. The lowest recorded leucocyte count was 1440. Similarly, thrombocytopenia (<150000 cells/cm3) was present among 108 (42.86%). The lowest recorded platelets count was 26,000 cells/cm3. Significant association was found between severity of dengue infection with leucopenia (X^2 13.268, p value 0.001) and thrombocytopenia (X^2 43.443, p value 0.000).

Conclusion

The prevalence of leucopenia and thrombocytopenia among dengue infected patients presenting to emergency department was high. In dengue, leucopenia and thrombocytopenia could possibly indicate progression to severity of disease during emergency department presentation.

Keywords

Dengue; Emergency; Leucopenia; Severity of disease; Thrombocytopenia;

2.3.32 Prevalence and factors associated with adolescent pregnancy among Chepang women of Raksirang Rural Municipality, Makwanpur District: A mixed method study

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Background

Adolescent pregnancy, which is defined as any pregnancy in a girl aged 10-19 years, is a matter of concern for public health and human rights. Chepang community is one of the highly marginalized groups in Nepal. This study aimed to find the prevalence and factors associated with adolescent pregnancy among Chepang women in Raksirang Rural Municipality using a mixed-methods approach.

Methodology

A cross-sectional study was conducted among 231 Chepang women selected using simple random sampling from Wards 5 and 8 of Raksirang Rural Municipality. For the qualitative study, 40 participants (20 in-depth interviews and 20 key informant interviews) were recruited through judgmental sampling. A concurrent triangulation mixed-method design was used. Bivariate and multivariate logistic regression were used to determine associated factors, while Braun and Clarke's six-step thematic analysis with an inductive-deductive continuum was used to explore the reasons for adolescent pregnancy.

Results

The study revealed that the prevalence of adolescent pregnancy among Chepang women was 71.4% [CI 65.14-77.16]. Poor knowledge of adolescent pregnancy (AOR=10.3, CI 8.42-14.87), unplanned pregnancy (AOR=13.3, CI 10.76-19.2), and lack of sex education (AOR=6.57, CI 3.85-11.27) were significantly associated with adolescent pregnancy ($p<0.05$). From qualitative analysis, six main themes emerged: (i) access to health services (ii) programmatic aspects (iii)

elopement marriage as a thoughtful escape (iv) discontinuation of education (v) understanding of marriage, pregnancy, and childbirth (vi) socio-cultural beliefs and norms. The triangulation of results showed the knowledge level, early marriage, and unplanned pregnancy as a convergent risk factor, elopement marriage and socioeconomic status as a divergent risk factor, and reluctance to change and women's position in society as an expansion risk factor.

Conclusion

The prevalence of adolescent pregnancy among the Chepang community was high. Increasing awareness of the consequences of adolescent pregnancy, providing sexuality education to adolescents, improving access to reproductive health services, and taking legal action to stop child marriage could prevent adolescent pregnancy.

Keywords

adolescent pregnancy, factors, adolescents, sexual and reproductive health, Nepal

2.3.33 Factors Influencing Mother's Autonomy in Decision-Making about Place of Birth and Their Birth Experiences in Mahottari and West Rukum Districts in Nepal: A Qualitative Study

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Background

Insitituional delivery is associated with reduced maternal mortality rates and is a key goal in Nepal and other resource-poor settings. There is wide variation in the utilisation of institutional delivery services in Nepal, and a range of factors affect the decision of where to give birth. This study explored the factors influencing mothers' autonomy in decision-making about the place of birth and their birth experiences in Mahottari and West Rukum districts in Nepal.

Methodology

A qualitative study was conducted involving 46 in-depth individual interviews. Participants included 34 mothers who birthed at home (n=9) or in health facilities (n=25), and twelve mothers' mothers-in-law (n=6) and husbands (n=6). "Levesque's conceptual framework on access to healthcare" with the demand-side and supply-side components was used for data analysis. Data were managed using NVivo software.

Results

For most mothers, their choice of birthplace was heavily influenced by the mother-in-law in Mahottari. The major reasons for home delivery included short labour, fear of surgery, poor services, and fear of obstetric violence. Further barriers included inadequate knowledge on birth preparedness, danger signs, free service, untimely receipt of incentives, and lack of free delivery services despite there being Government provision. Key facilitators for insitititional delivery in West Rukum were a feeling of safety for both mother and newborn, 'good' behaviour of health workers, nurses' 24-hour availability in birthing centers, availability of free delivery, incentives and trust as well as supportive mothers-in-law and mother's group.

Conclusions

Increasing utilisation of institutional delivery in the birthing centers in Nepal likely requires multiples strategies, recognising the multiple influences on decision-making. This includes educating women and families and empowering women for the autonomy of decision-making for

their own and newborn's health, as well as making sure of respectful friendly maternity services with the provision of free delivery services and timely incentives.

THEME 4: BIOMEDICAL AND TRANSLATIONAL RESEARCH

2.4.1 Knowledge, Attitude and Practice regarding pharmacovigilance among Healthcare Professionals of Nepal: as cross sectional study

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Background

Pharmacovigilance plays a crucial role in improving patient care and safety associated with medicine use. However, the pharmacovigilance system of Nepal seems to be ineffective owing to the limited number of adverse drug reaction (ADR) cases reported so far. To address the current reporting gap, it is necessary to assess knowledge, attitude and practice of Health Care Professionals (HCPs) on pharmacovigilance which impacts on ADR reporting. The objective of this study is to assess knowledge, attitude and practice of pharmacovigilance among Health Care Professionals of Nepal.

Methodology

A cross-sectional baseline survey was conducted among the health care professionals of 26 centers (12 Regional pharmacovigilance centers and 14 non-regional pharmacovigilance centers) in Nepal. The study sites were selected purposively and participants were selected conveniently from all

sites. The sample size for the quantitative method was 2109. Data was obtained using semi-structured self-administered questionnaires and online Google forms. The descriptive and analytical analysis was performed in SPSS version-22. 70

Results

The Result showed that out of 2017 participants, the majority (87.80%) correctly answered 50% of knowledge questions. While 3.37% of participants could answer all the questions related to knowledge on pharmacovigilance correctly; 0.15% could not answer any of the questions correctly. The attitude score showed that 66.52% (out of 2055) participants were inclined towards poor attitude regarding pharmacovigilance system. Moreover, out of 865 participants who observed ADR, only 12.31% of them reported to a pharmacovigilance center, during their professional practice. HCPs of regional pharmacovigilance centers were found to have more knowledge along with better attitude regarding pharmacovigilance.

Conclusions

Although the knowledge on pharmacovigilance was found to be good among HCPs, the majority of the participants had poor attitude towards the pharmacovigilance system. The reporting was lacking even when adverse drug reactions cases were identified. Thus, immediate actions are necessary to improve pharmacovigilance system in Nepal.

Keywords

Pharmacovigilance, Adverse drug effects, Knowledge, Attitude, Practice

2.4.2 Prevalence of Metabolic Syndrome in Patients with Subclinical and Primary Hypothyroidism visiting Hetauda Hospital of Makwanpur District Nepal

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Background

Metabolic syndrome (MetS) is a cluster of metabolic abnormalities associated with increased risk for atherosclerotic cardiovascular disease (CVS) and type 2 diabetes mellitus. Thyroid hormones are major regulatory hormones that control the rate of metabolic function; thus, alteration in the levels of these hormones may be associated with MetS. The objective of our study was to find out the prevalence of MetS in patients with hypothyroidism visiting Hetauda Hospital, Nepal.

Methodology

A hospital-based cross sectional study was conducted at Hetauda Hospital from June to September 2021. A total of 170 hypothyroid patients were enrolled in this study. MetS was diagnosed by National Cholesterol Education Program-Adult Treatment Panel III (NCEP-ATP III; 2005) revision criteria. The anthropometric indices were recorded. fT_3, fT_4, and TSH were measured by chemiluminescence immunoassay (CLIA) method and other biochemical parameters were estimated by colorimetric method. Data were analyzed descriptively by using SPSS 21.0.

Results

Patients were aged between 13 and 60 years, with a mean age of 38.78 years. The prevalence of MetS was 42.1% of which 76.6% were females. Furthermore, the prevalence of MetS was found to be 41.7% in subclinical hypothyroidism and 43.2% in primary hypothyroidism.

Conclusion

The prevalence of MetS is high in both subclinical and primary hypothyroidism. Screening for MetS in patients with hypothyroidism can reduce the risk for CVD, as well as the mortality rate and mortality associated with it.

Keywords

Metabolic Syndrome, Subclinical hypothyroidism, Overt hypothyroidism

2.4.3 The impact of digital antenatal care intervention on paper-based recordkeeping: results from an audit of antenatal records in primary health care facilities in Nepal

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Background
Good recordkeeping is important in antenatal care (ANC). The mIRA study aimed to improve ANC quality through tablet-based electronic decision support systems (EDSS). Electronic data entry was implemented alongside existing paper-based ANC records, adding an additional record-keeping requirement for health care providers. This study assesses the impacts of the EDSS on paper-based ANC records.

Methodology
The audit was conducted in 19 primary healthcare facilities in Nepal. We examined pregnant women's records before (n=136) and after (n=138) EDSS implementation. For eight selected indicators in the ANC card and ANC register, we estimated the percentage completeness (any value recorded) and agreement (whether values matched), comparing results before and after intervention, additionally examining EDSS records. Differences in completeness and agreement were estimated using chi-square, fisher's exact test, and likelihood ratio, as appropriate.

Results

Completeness of paper ANC records was high before intervention (>80% for all indicators, except for tetanus toxoid vaccination). There was general trend towards variables being more complete after implementation of the EDSS for both the ANC card and the ANC register. There was >15% improvement in completeness and in agreement of tetanus toxoid vaccination date records in ANC cards and ANC registers after the intervention. Completeness of variables in the EDSS was low, suggesting recordkeeping in ANC cards and ANC registers was prioritized. Percentage agreement increased slightly in all eight indicators after intervention (overall=81.28%). The overall percentage agreement was 73.9% before intervention. Amongst the selected eight indicators, only women's age records showed >90% agreement both before and after the intervention.

Conclusion

EDSS did not have a negative impact on paper-based ANC records. The additional recordkeeping required by the EDSS resulted in general improvements in completeness and agreement of ANC cards and ANC registers. However, large-scale EDSS implementation should consider how to integrate digital and paper-based records to decrease burden on ANC staff.

Keywords

Digital health, Antenatal care, electronic decision support system, recordkeeping, quality improvement

2.4.4 A single center, open label pilot study to evaluate the safety and efficacy of CC-11050 in Nepalese patients with Erythema Nodosum Leprosum

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Background

Erythema Nodosum Leprosum (ENL) is an immunological complication that occurs in those affected by borderline lepromatous (BL) or lepromatous leprosy (LL). Present standard treatments have significant side effects. Phosphodiesterase 4 inhibitors (PDE4i) are a class of compounds that affect cytokine production, neutrophil function, and antigen processing and presentation; therefore, a PDE4i could have potential for treating ENL. CC-11050 (a PDE4i) is a non-steroid, anti-inflammatory drug that has been previously trialed in other inflammatory skin conditions and shown to be well tolerated in humans.

Methodology

A single center, Phase 2, open-label trial was performed to evaluate the safety and efficacy of CC-11050 treatment over 28 days in 10 males with new or recurrent episodes of ENL. The ENLIST ENL severity scale alongside standard clinical and laboratory examinations were performed. Longitudinal plasma samples collected during the study drug administration were also examined for various inflammation markers.

Results

All 10 enrolled male subjects completed study protocol. Average ENL severity score declined from average 14.8 on Day 0 to 2.2 on Day 28. Altogether, 16 mild or moderate adverse events were reported. Significant reductions in pro-inflammatory markers were seen within 2-3 weeks of treatment which correlated with severity scores.

Conclusion:

The last therapeutic agent for ENL treatment was developed about 50 years ago; and there is an imperative need for new therapies against ENL with fewer side effects to be identified. The safety

and efficacy of CC-11050 treatment for ENL was demonstrated and supported by immunological evidences.

Keywords

Leprosy, Erythema Nodosum Leprosum, Phase II clinical trial, CC-11050

2.4.5 Patterns of supportive care needs among cervical cancer patients in Nepal: A latent class analysis

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Background

Latent class analysis (LCA) can be helped to identify subgroups of cervical cancer (CC) patients with similar patterns of supportive care needs (SCNs). The study targeted to identify the patterns of SCNs among Nepali CC patients and examine the association between patterns and selected sociodemographic variables.

Methodology

A cross sectional study design enrolled 218 CC patients purposively from five cancer hospitals in Nepal**.** Ethical approval was granted from School of Nursing & Health (ZZU IRB 2019-028),

China and Nepal Health Research Council (Ref. No.1706), Kathmandu, Nepal. LCA was performed to identify the patterns of SCNs in psychological, physical daily living, health system information, patient care support and sexuality domain of Supportive Care Need Survey Short Form 34 Nepali version. Chi square and analysis of variance were used to measure the association between latent class memberships and selected demographic variables.

Results

Four patterns of SCNs were identified. Among them, patients in class 1 (n=31, 17.3%) and class 4 (n=49, 18.4) reported lower level of SCNs with elevated score on psychological domain followed by physical domain. Patients in class 2 (n=73, 32.6%) reported higher needs of supportive care with elevated score on psychological domain and lowest score on sexuality domain. Patients in class 3 (n=65, 31.7%) reported moderate level of SCNs with elevated mean score on psychological domain followed by health system information domain. There is significant difference between mean duration of disease with different latent class membership. Occupation, hospital type, disease duration, dietary status and currently sexually active had significant association with patterns of SCNs.

Conclusions

This study pinpoints 4 patterns of SCNs among Nepali CC patients under cancer treatment with elevated needs of support on psychological domain in each latent class membership.

Keywords

Keywords: latent class, supportive care needs, cervical cancer

2.4.6 Leprosy and Soil-Transmitted Helminths Part 3: Water, Sanitation and Hygiene (WASH) Training and Socioeconomic Indicators

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Background

Endemic leprosy has been associated generational poverty, poor housing, and/or poor sanitation. The majority (94%) of annual new leprosy cases are in populations co-endemic for soil-transmitted helminths (STH); and deworming and water and sanitation and hygiene (WASH) training are often methods used to help reduce STH infections in these contexts.

Methodology

New leprosy cases, new leprosy reaction cases and household contacts were interviewed and screened by qPCR for STH co-infections common in Nepal at intake and quarterly for up to 2 years. Participants were provided deworming treatment, ivermectin and albendazole, at intake and 6-monthly during the study. WASH training was provided at intake.

Results

N334 new and/or reaction leprosy cases and 104 household contacts were enrolled in the study from 2016 to 2019. Provisional analyses found almost two-fifth (38%) of the patients had ≥1 STH infection at enrolment. Only 25% drank purified water and 40% washed hands at critical times (after toilet, after touching dirty things and before cooking) which gradually increased to 60% and 50% respectively at 2-year follow-up. Only 23% of participants had WASH knowledge at enrolment and this was associated with low education status (~40% of participants with ≤lower secondary). Seventy percent (70.0%, 95% CI: 58%-79%) of STH positive cases were cured of worms at three months after one course of dewormer at enrolment with *Necator*

americanus showing lowest cure rate at (62%.) and *Strongyloides stercoralis* showing highest (100%).

Conclusion

Majority of leprosy patients come from low educational background with poor access to WASH. Periodic WASH training interventions and Mass Drug Administration campaigns have potential to decrease STH burden and likely improve leprosy status. More analyses are in progress.

Keywords

Leprosy, Water Sanitation and Hygiene, Soil-transmitted helminth

2.4.7 Association between human leukocyte antigen HLA-B*13:01 and dapsone-induced hypersensitivity reactions in Nepalese leprosy patients

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Background

About 2-3% of Nepalese leprosy patients develop dapsone-induced hypersensitivity (DHS) reactions after starting daily dapsone as a part of WHO-recommended multi-drug therapy. The hypersensitivity leads to weeks to months-long hospital stays and mortality in about 10% of the affected. Various studies have confirmed a human leukocyte antigen allele HLA-B*13:01 as an important risk factor for development of DHS in many South-east Asian countries. We designed a

retrospective and prospective study to find the association of HLA-B*13:01 and DHS in Nepalese leprosy patients.

Methodology

HLA-B*13:01 was identified by a qPCR-based test in patient blood. Patients classified by clinicians as DHS based on prevalent international hypersensitivity criteria were considered cases. Patients not developing any hypersensitivity even after 3 months of daily dapsone use were considered dapsone-tolerant or controls. All new leprosy cases diagnosed from June 2022 were also tested for the allele and all allele positive patients were denied dapsone.

Results

Until 7 March 2023, 19 historically known DHS cases and 46 dapsone-tolerant controls were enrolled. 74% of cases and 7% of controls were allele positive (Odds Ratio: 40.1, 95% CI: 8.5 to 190). Considering 2.5% DHS prevalence, the positive predictive value was 17 and negative predictive value was 99. During the same time, 93 new cases have been enrolled and 11% were HLA-B*13:01 positive.

Conclusion

Presence of the allele proves to be a high risk factor for DHS. High prevalence of HLA-B*13:01 (~11%) than reported prevalence of DHS could hint yet another undiscovered factor precipitating DHS.

Keywords

Dapsone-induced hypersensitivity, leprosy, HLA-B*13:01

THEME 5: ENVIRONMENTAL HEALTH AND CLIMATE CHANGE

2.5.1 Knowledge, Attitude and Practice on Solid Waste Management among households of slum areas of Pokhara Metropolitan

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Background

Solid waste management is of major challenge in slum dwelling these days and, the lack of understanding on proper waste handling measures pose a serious threat to the public health and well-being. This study aims to assess the level of knowledge, attitude and practice on solid waste management among households of slum areas of Pokhara Metropolitan.

Methodology

A cross sectional study was conducted from June to November, 2019 among 382 households of slum areas from selected wards of Pokhara Metropolitan of Kaski district. The data were collected using structure questionnaire. Data were entered in Epidata 3.1 and IBM SPSS version 21 to perform the bivariate analysis of the data.

Results

The study found that that majority (85.1%) of the households had heard about solid waste management. 86.9% of the households knew about the management of non-biodegradable waste. Similarly, 88% of the households have knowledge about the management of biodegradable waste. The majority (88.2%) of the households had good level of knowledge on solid waste management. Nearly cent percent (96.86%) of the households had positive attitude towards solid waste management. Only 20.9% of the households had good practice of solid waste management. Major

source of income (p-value=0.026 and χ^2=13.412) and duration of stay at the residence (p-value=0.037 and χ^2=11.824) were found to be significantly associated with waste management practice.

Conclusion

Despite the good level of knowledge and positive attitude of slum people towards solid waste management, the practice of waste management among the households was found to be pretty poor.

Keywords

Solid waste; Household waste; Waste management; Household waste disposal

2.5.2 Knowledge, Attitudes, Practice and Risk Perceptions Regarding Heatwave Among Outdoor Workers in Nepal

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Background

Climate change and the resulting impacts are apparent and the people around the globe, especially those from low-income countries, confront several challenges. The continuous rise in global temperature has had evident impacts on the lives of the most vulnerable population, especially among outdoor workers.

Method

We did conduct a mixed method study to assess the knowledge, attitude, practice, and risk perception regarding heatwaves among the outdoor workers in the selected eight districts of Nepal. A total of 365 quantitative surveys and 11 Focus Group Discussions were conducted among the outdoor workers (farmers, laborers, rickshaw drivers/pullers, street vendors, business owners, and service providers).

Result

The results show that despite having experienced climate change, the participants were less aware of heatwaves, as the majority reported that neither the government nor any civic organizations had informed them about heat waves. Even though the participants were unaware of heatwaves, most of them were at least partially applying some preventive measures. Similarly, focus group discussions further revealed that participants were unaware of the effects of heatwaves though they were able to draw some connections between environmental degradation and climate change.

Conclusion

To conclude, a significant effort needs to be made to massively raise awareness about climate change and its effects, particularly on heatwaves. To minimize the detrimental effects of heatwaves, government and other civil society organizations must step up their ongoing efforts.

Keywords

Heatwave; Climate change; Risk perception; KAP regarding heatwaves

2.5.3 Prevalence and associated factors of burnout among nurses at Birtamod Municipality of Jhapa District

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Background

Globally, burnout is one of the major nursing workplace problems due to practice in a complex organizational setting with multiple and most of the time conflicting goals. Burnout is a predictor of different physical and psychological effects on human health. This study aims to determine the prevalence and associated factors of burnout among nurses at Birtamod Municipality of Jhapa district.

Methodology

In between September to November 2022, a cross-sectional study was conducted among 427 randomly selected nurses working within 14 different hospitals at Birtamod Municipality. A validated Copenhagen Burnout Inventory (CBI) tool was used to assess the prevalence of burnout. Descriptive analysis was performed. Bivariate and binary logistic regression were applied to identify the associated factors of burnout.

Results

The overall prevalence of burnout was 36%. Personal, work related and client related burnout were found to be 53.8%, 35.4% and 26.6% respectively. Living arrangement with family (β=2.295, p=0.011), working in pediatric ward (β=3.231, p=0.004) and perceived stress (β=4.054, p=0.026) were associated with personal burnout in binary logistic regression. Similarly, working in pediatric ward (β=4.426, p=0.001) and perceived stress (β=2.451, p=0.020) were significantly associated with work related burnout. Working in pediatric ward (β=4.856, p=0.002), working for more than 8hours a day (β=1.750, p=0.030) and perceived stress (β=3.671, p=0.009) were associated with client related burnout in binary logistic regression. Nurses working in the pediatric ward were eight times more likely to develop burnout as compared to those working in the medical and neuro wards of hospitals.

Conclusion

Nurses working at hospitals are suffered from burnout. Perceived stress and type of work depending on the departments are major predictors of overall burnout. Burnout among nurses is preventable using effective interventions and preventive strategies

Keywords

Burnout, chronic stress, mental health, exhaustion, psychological condition

2.5.4 Attitude and the factors associated with use of public toilets among women in Kathmandu Metropolitan City

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Background

The UN general assembly has identified sanitation as distinct human right. Along with the discovery of infectious diseases and changing lifestyle patterns in urban areas, sanitation needs have grown. Public toilets are a valuable resource in a densely populated city like Kathmandu. Moreover, due to biological processes such as menstruation and high vulnerability to infections, women have a higher sanitation need. Hence this study aims to identify the attitude and factor associated with public toilet use among women in Kathmandu metropolitan city.

Methodology

This study is descriptive, cross-sectional, conducted among 255 respondents. A purposive sampling method was applied, and respondents were interviewed using a pre-tested questionnaire prepared under the guidance of Public Health faculty members of MMIHS. The collected data were entered and analyzed in IBM SPSS 26.

Results

Out of the 255 respondents, 92% have used public toilet at least once. Less than half (42.7%) of the respondents preferred to use a pay per use public toilet. Most of the respondents (93%) said that they were not satisfied with the state of public toilets. More than half (54.5%) had negative attitude towards using public toilets. The attitude towards using public toilets was found to be associated with their preference of type of toilet, importance of light, ventilation, soap, and absence of smell inside the toilet. The status of public toilets of selected locations were found unsatisfactory on observation as well.

Conclusion

Most women were unsatisfied with the status of public toilets and would prefer not to use a pay per use toilet. Higher number of respondents having negative attitude towards using public toilets is justified by the findings from observation of the public toilets as well. An intervention to improve the status of public toilets and to make the public realize their ownership seems to be needed.

Keywords

Attitude, women, public toilets

2.5.5 Practices of pestcide use and its health effects among farmers of bhaktapur district: a cross-sectional analytical study

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Introduction

Globally increasing use of pesticides is an issue in the agricultural sector. Pesticide use has been steadily increasing annually in Nepal. If pesticides are not applied appropriately, they pose serious health risks.

The aim of the study was to assess the use of pesticides, its health effects and factors associated with health effects among farmers of Bhaktapur, District.

Methodology

Community based cross sectional analytical study was conducted from July to December 2019 among 320 farmers in Bhaktapur District. Simple random sampling techniques was used to collect data. Data were collected by face to face interview with farmers using pre –tested semi structured questionnaire. The relation between dependent and independent variables were shown by using chi- square test. P-value less than 0.05 were considered as statistically significant throughout the analysis in this study. The statistical analysis was done by using SPSS Software version 16.0.

Results

More than Half of the farmers were (58.9%) knows the name of the pesticide they are using. majority of the farmers used herbicide (40%), insecticide (29.7%), Fungicide (22%). About 34.6% of the farmers had received formal training related to pesticide handling. Slightly less than two-third 64.2% complained about discomfort immediately after spraying pesticides. Majority of the farmers complained headache (44.2%), skin rashes (27.3%), dizziness (12.9%), Eye irritation (10.4%) and vomiting (5.2%). Slightly less than half of the farmers 45.5% reported having chronic diseases. Knowledge on health impact and use of PPE were significant associated with health effects among farmers (p-value <0.05).

Conclusion

Despite considerable knowledge, farmers had unhygienic practice on pesticides use and had health effects due to pesticide use. Pesticides were in need of special attention in terms of safe handling, determing the wind direction, spray. Government should organized the continuous refresher training on pesticide use, handling and disposal to transfer their knowledge into practice.

2.5.6 Risk Assessment of Tuberculosis among the Adults of Kummayak Rural Municipality of Nepal : A Cross Sectional Study

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Introduction

Risk Assessment follows risk analysis and evaluation; potential hazards are identified and risk is estimated and evaluated. Tuberculosis is a curable and preventable disease caused by *Mycobacterium tuberculosis,* mainly affecting the lungs. This long-standing disease has only got complicated with latent infections, drug resistance, co-infections, and weakened immune system, however there hasn't been enough study in Nepal that could determine the risk of Tuberculosis.

Methodology

This is a descriptive cross-sectional quantitative study, done among the 410 adults of Kummayak Rural Municipality of Panchthar district. A simple random sampling to select the participants. A structured questionnaire was delivered via interview to determine the exposure status. Scores were assigned to each variable as per Johnson's Scoring Algorithm to develop scores based on regression, and was stratified to high and low risk. Moreover, regression analysis was done to determine the strength of association with the risk of developing Tuberculosis.

Results

On applying the Johnson's Scores, risk of TB was stratified where 55.1% were at high risk of TB and 44.9% were at low risk of TB. Association between age of 20-40, gender being male,

occupation of high risk, monthly income of less than ten thousand, monthly income ranging from ten thousand to twenty thousand, malnourishment, inadequate food security, bad life style, contact history, travel history, kidney disease, hypertension, passive smoking, inadequate preventive practice and bad household environment had strong association to risk.

Conclusion

More than half of the respondents were at high risk of attaining TB, this is because they were exposed to major risk factors such as unhealthy lifestyle, inadequate practice of prevention against TB, presence of comorbidities and inadequate household environment. With sensitization of chronic ill patients and awareness and adoption of prevention against TB, the risk can be minimized.

Keywords

Tuberculosis, Risk Analysis, Risk Evaluation, Risk Scoring, Nepal

THEME 6: NETWORKING, COLLABORATION AND PARTNERSHIP IN RESEARCH FOR HEALTH

2.6.1 Using Method Information Index Plus to improve the quality of FP counselling in private health facilities and pharmacies in Madhesh and Karnali provinces of Nepal

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Background

Momentum Private Healthcare Delivery (MPHD) Nepal is a part of a suite of innovative awards funded by the U.S. Agency for International Development (USAID). Momentum Nepal works with private sector health facilities and pharmacies to expand the access to high quality, person-centered family planning (FP) services for adolescent and youth by strengthening the technical capacity and business acumen of private sector private sector owners and providers. We present here the standards included in the checklist and report changes in them over one year period.

Methods

The project developed Quality Assurance/Quality Improvement (QA/QI) lighter version checklist based on Method Information Index (MII) Plus and minimum service standards which was developed into a web-based application named Gunastar Sewa. This checklist consisted of thirteen standards of which quality counselling was assessed based on MII Plus standards: if a client was informed about all FP methods, possibility of switching to another method, possible side effects

and what to do if experienced any side effects. Monthly assessments were carried out in 105 private sector facilities from March 2022 to February 2023.

Results

Findings of first versus last assessment in 105 private health facilities and pharmacies for MII Plus standards was 81% versus 97% for informed about all FP methods, 78% versus 94% for information on possible side effects, 63% versus 97% achieved for what to do if they experience any side effects, and 49% versus 96% informed about the possibility of switching to another method. Also, adherence to standard on client respect and dignity was 97% versus 100%, and for infection prevention is 34% versus 100%.

Conclusion

The QA/QI approach focused on MII Plus standards was easy to use and documented that program intervention efforts resulted in improved quality of FP counseling in the private sector health facilities and pharmacies.

Keywords

web-based application, quality assurance, quality improvement, Method Information Index Plus, quality assessment