Community engagement towards promoting rational antimicrobials use in two municipalities of Lalitpur district, Nepal

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Short BIO

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Introduction

- The burden of antimicrobial resistance (AMR) is significant in developing, low- and middle-income countries like Nepal.
- Community engagement can be important to understand the problem of AMR and implement methods to prevent it.

Objective

- To collect baseline data on demographics, knowledge, attitude, practice and adherence of women regarding antimicrobials as part of a larger quasi-experimental study.

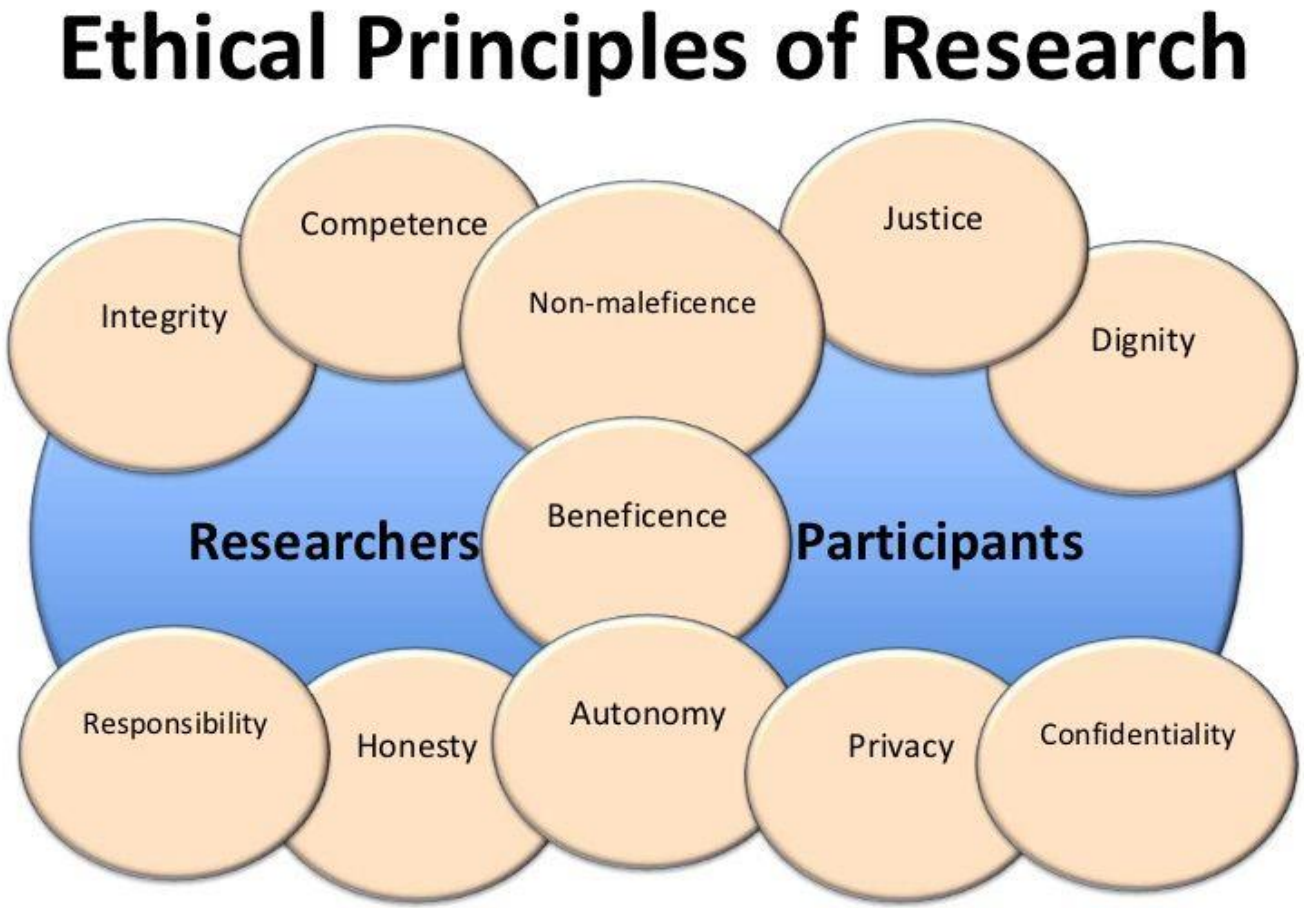
Methods

- The baseline survey was conducted at Mahalaxmi (proposed intervention area) and Godavari (proposed comparison area), two urban municipalities of Lalitpur district, Nepal.
- The study population was women belonging to the mother's group of 45 female community health volunteers (FCHVs) in each of these municipalities.
- The survey was done from September 2023 to January 2024.
- Permission for this research was obtained from the administrative head of the municipalities followed by the involvement of FCHVs and others involved.

Methods Contd..

- They were approached because of their close contact with the community.
- Ethical approval was obtained from the Nepal Health Research Council.
- Participants were informed about their voluntary participation, and permission was obtained from the chairs of both municipalities and the respective ward chairs for the participation of the mothers' groups.
- The risk for the participants was minimal.
- Informed consent was obtained before the start of the study.

Ethical principles were followed during the research



Results

- There were 580 women from Mahalaxmi and 627 women from Godawari municipality who completed the questionnaire.
- Participants from both municipalities had similar demographic characteristics.
- Mothers group engagement for the Godawari municipality as this was our proposed intervention area for the study, was done smoothly with the help of stakeholders like ward chairs, the government staff from the health section of the municipalities and the chair of mother groups in the respective wards.
- The mothers were provided with refreshments for their active participation and no financial incentives were given to them to reduce bias.
- The educational intervention was delivered in a common convenient place in all the wards of Mahalaxmi municipality.

Results Contd..

- Knowledge was higher in Mahalaxmi municipality, but adherence was higher in Godawari municipality ($p < 0.0001$), but no significant difference was seen in attitude and practice scales.
- Knowledge, attitude, practice and adherence scores among different subgroups of respondents in the two municipalities were found to be significantly different for education ($p < 0.0001$), and occupation ($p < 0.0001$).
- Similarly, the attitude scores for the groups according to presence/absence of respiratory disease in the household were also found to be significant ($p = 0.027$).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Socio demographic variables by municipalities, AMR baseline survey 2024. [n=1207]

Variable	**Mahalaxmi (n=580)** **(n, %)**	**Godawari (n=627)** **(n, %)**	**p-value**
Age (median ± iqr)	45 ± 17	42 ± 14	0.800
Highest Education			
No formal education	267 (46.0%)	327 (52.2%)	0.167
Primary	89 (15.3%)	71 (11.3%)	
Secondary	111 (19.1%)	116 (18.5%)	
Higher secondary	81 (14.0%)	79 (12.6%)	
Bachelors and above	32 (5.5%)	34 (5.4%)	
Occupation			
Not working	102 (17.5%)	95 (15.2%)	0.123
Daily wage	29 (5.0%)	29 (4.6%)	
Retired	83 (14.3%)	75 (12.0)	
Home maker	346 (59.7%)	416 (66.3%)	
Other	20 (3.4%)	32 (2.7%)	
Work experience in years (median ± iqr)	10 ± 17	10 ± 14	0.526

Presence of respiratory disease in the household			
Yes	479 (83.0%)	487 (78.4%)	**0.044**
No	98 (17.0%)	134 (21.6%)	
Presence of other communicable diseases in the household			
Yes	565 (97.4%)	611 (97.4%)	0.970
No	15 (2.6%)	16 (2.6%)	
Presence of chronic illness in the household			
Yes	304 (52.5%)	311 (49.8%)	0.341
No	275 (47.5%)	314 (50.2%)	
No disease present in the household			
Yes	388 (66.9%)	477 (67.2%)	**<0.001**
No	192 (33.1%)	149 (23.8%)	
Presence of health worker at household			
Yes	492 (84.8%)	558 (89.0%)	**0.032**
No	88 (15.2%)	69 (11.0%)	

Knowledge and attitude scores that were significantly different among different subgroups of respondents (in the two municipalities surveyed)

Characteristic	Knowledge score Mean (±SD)	P value	Attitude score Median (IQR)	P value
Highest education				
No formal education	8.80 ± 2.6	<0.001	38 (7)	**0.003**
Primary	9.88 ± 2.8		42 (6)	
Secondary	10.33 ± 2.78		41 (8)	
Higher secondary	11.39 ± 2.6		40 (8)	
Bachelor's degree and above	11.62 ± 2.8		40 (8)	
Occupation				
No work	9.95 ± 3.03	<0.001	42 (9)	**<0.001**
Daily wage	9.98 ± 2.04		39 (7)	
Retired	11.02 ± 2.94		41 (12)	
Home maker	9.40 ± 2.79		40 (7)	
Other	9.47 ± 3.21		40 (7)	

Practice and adherence scores that were significantly different among different subgroups of respondents (in the two municipalities surveyed)

Characteristic	**Practice score Median (IQR)**	**P value**	**Adherence score Median (IQR)**	**P value**
Highest Education				
No formal education	5 (2)	**<0.001**	6 (3)	**<0.001**
Primary	5 (4)		5 (3)	
Secondary	7 (4)		5 (3)	
Higher secondary	9 (6)		6 (3)	
Bachelor's degree and above	8 (5)		6 (2)	
Occupation				
No work	5 (2)	**<0.001**	6 (3)	**<0.001**
Daily wage	5 (4)		5.5 (2)	
Retired	7 (4)		6 (2)	
Home maker	7 (4)		5 (3)	
Other	8 (4)		5 (3)	

Key Findings

- There was a significant difference in the understanding of amoxycillin as an antibiotic between the respondents of the two municipalities.

- Similarly, the participants were aware that the use of antibiotics can lead to the development of secondary infections by altering and killing the beneficial bacteria of our body.

- Limited knowledge about the differentiation of antibiotics and other medicines among the mothers was similar to other study findings.

- Many participants had not heard the term ‘antibiotic resistance’.
- Mothers from both the municipalities showed significant difference on the seriousness of antimicrobial resistance as a global issue.
- The attitude was also different for the statement responsibility of the pharmacists to educate the patient on proper use of antimicrobials and antibiotic can be dispensed without prescription.
- The reason for poor practice may be the poor training of the mothers in the community.

Recommendations

- The findings shows an urgent need for the educational intervention for the participants for enhancing the knowledge about the safe and rational use of antibiotics. Many participants had never heard the term ‘antibiotic resistance’. Educational interventions may improve the awareness and knowledge, but the challenge might be to retain the information. We will carry out educational interventions in the next phase of the study.

Conclusion

- The mothers were engaged prior to delivering the educational intervention by the FCHVs and the research team in the wards of the Mahalaxmi municipality.
- The study followed all the ethical rules and principles for participant engagement without any risk to the participants.
- There was no financial incentive provided to the participants except refreshments to compensate for their time involvement.
- We are conducting the quarterly process evaluation with FCHVs, follow-up study, direct observation of mother's group meeting with supportive supervision and end-line survey after one year to measure the effectiveness of the intervention.

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Thank you