

Knowledge, attitude and practice towards antimicrobial resistance and antimicrobial adherence among female community health volunteers before and after an educational intervention

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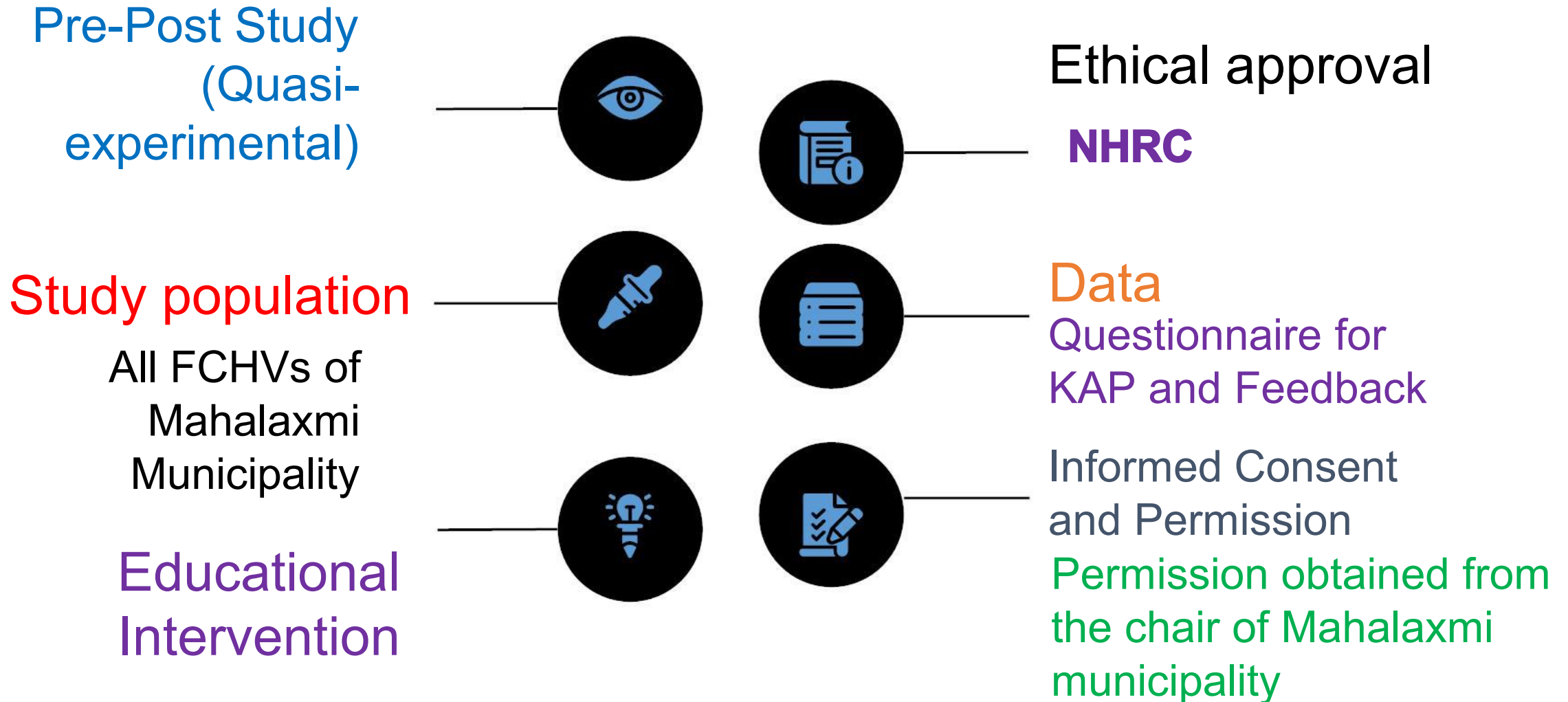
Introduction

- The burden of antimicrobial resistance (AMR) is significant in developing, low- and middle-income countries like Nepal.
- Community engagement can be essential to understanding the problem of AMR and implementing methods to prevent it.
- Female Community Health Volunteers (FCHVs) play an important role in Nepal's health care system.

Objective

To compare the knowledge, attitude, and practice towards antimicrobial resistance and antimicrobial adherence among FCHVs of Mahalaxmi Municipality, Lalitpur, Nepal before and after an educational intervention.

Methods



Results

- All FCHVs from Mahalaxmi municipality participated.
- Most participants were aged between 41-50 years [19 (42.2%)] and [25 (55.6%)] had working experience greater than 10 years.

Results

Age (in years)	Number (percentage)
30-40	9 (20%)
41-50	19 (42.2%)
51-60	16 (45.6%)
Above 60	1 (2.2%)
Working Experience	
Less than 5 years	10 (22.2%)
5-10 years	10 (22.2%)
More than 10 years	25 (55.6%)

Results for Knowledge

The scores for the statements 'antimicrobial_resistance_is_a_serious_problem_worldwide', [84.4% vs 60% ($p=0.004$)] and 'antibiotics_are_used_to_inhibit_the_growth_of_bacteria' improved post- intervention [100% vs 77.8% ($p=<0.001$)].

Knowledge statements	Pre-Test (p1) N (%)	Post Test (p2) N (%)	Difference p2-p1	p-value ($p_2>p_1$)

Antimicrobial resistance is a serious problem worldwide.				
Yes	27 (60)	38 (84.4)	11	0.004
No	6 (13.3)	7 (15.6)	-1	
Antibiotics are used to kill bacteria.				
Yes	41 (91.1)	44 (97.8)	3	0.083
No	4 (8.9)	1 (2.2)	-3	
Antibiotics are used to inhibit the growth of bacteria.				
Yes	35 (77.8)	45 (100)	10	<0.001
No	10 (22.2)	0 (0)	-10	
Antibiotic misuse can lead to antimicrobial resistance.				
Yes	13 (28.9)	41(91.1)	28	<0.001
No	6 (13.3)	3 (6.7)	-3	
Antibiotics can treat acute bacterial diarrhea.				
Yes	25 (55.6)	43 (95.6)	18	<0.001
No	19 (42.2)	2 (4.4)	-17	

Results for attitude

- Scores for attitude statements like, taking antibiotics without consulting a physician [91.1% vs 60% ($p=<0.001$)], consequences of missing a dose can contribute to antibiotic resistance, [75.5%vs 46.6% ($p=0.002$)] and over prescribing may also be a cause of antimicrobial resistance, [80%vs 48.9% ($p=<0.001$)] among others, improved.

Patients should be asked not to take antibiotics without consulting a physician.

Agreed	27 (60)	41 (91.1)	14	<0.001
Disagreed	18 (40)	4 (8.9)	-14	

Antibiotics are safe, so they can be used routinely.

Agreed	21 (46.6)	34 (75.5)	13	0.002
Disagreed	34 (53.3)	11 (24.4)	-23	

Over prescribing may also be a cause of antimicrobial resistance.

Agreed	22 (48.9)	23 (80)	1	<0.001
Disagreed	23 (51.1)	9 (20)	-14	

Results for practice

- Statements like teaching someone how to use antibiotics, [15.8% vs 84.4% ($p=0.013$)], counselling or informing patients about the possible harms by misusing antibiotics, [4.4% vs 17.7% ($p=0.022$)] and the potential harms by abusing antibiotics, [6.6% vs 26.7% ($p=0.022$)] were improved.

Have you ever taught someone how to use antibiotics?

Frequent	7 (15.8)	38 (84.4)	31	0.013
Infrequent	1 (15.6)	44 (95.6)	43	

Do you counsel or inform patients that antibiotic misuse can lead to antibiotic resistance?

Frequent	2 (4.4)	8 (17.7)	41	0.022
Infrequent	43 (95.6)	37 (82.1)	36	

Do you counsel or inform mothers that antibiotic abuse can lead to antibiotic resistance?

Frequent	3 (6.6)	12 (26.7)	39	<0.001
Infrequent	42 (93.4)	33 (73.3)	21	

Median
knowledge,
attitude,
practice scales
and total
scores pre and
post workshop

Characteristic	Median (IQR)	P-value
Knowledge		
Pre test	10 (2)	0.087
Post test	10 (1)	
Attitude		
Pre test	31 (5)	<0.001
Post test	26 (6)	
Practice		
Pre test	31 (4)	0.011
Post test	34 (5)	
Total Score		
Pre test	73 (9.5)	0.004
Post test	71 (9)	



Feedback responses

The overall feedback of the educational sessions using a 7-item 5-point feedback scale were 4.71

Individual Feedback statements	Mean ± Standard Deviation
1. The objectives of the academic session were clearly presented.	4.68 ± 0.70
2. The examples used were relevant to the objectives of the academic session.	4.57 ± 0.49
3. The case scenarios used were relevant to the objectives of the academic session.	4.73 ± 0.49
4. Facilitators performed their role effectively.	4.73 ± 0.44
5. This academic session will be important for my future practice.	4.75 ± 0.43
6. Facilitators were successful in creating a friendly environment.	4.75 ± 0.43
7. The group dynamics during the academic session was satisfactory.	4.73 ± 0.44
Normalized feedback scale (Total score/7)	4.71 ± 0.43

Conclusion



Challenge

Knowledge retention after the intervention



Significance

FCHVs engagement in the community can add to the awareness towards AMR.



Success

The session was effective in increasing participants' attitude and practice scores and may lead to more rational use of antimicrobials.



Research

This is a part of the collaborative research. Baseline findings have already been published, and the Endline survey is ongoing!



Lessons

Frequent trainings are needed for knowledge retention.



Summary

One Health can only be successful by involving all the important stakeholders including community engagement

Take away message

The session was effective in increasing participants' attitude and practice scores and may lead to more rational use of antimicrobials.

Frequent trainings are needed for knowledge retention.

FCHVs engagement in the community can add to the awareness towards AMR.

One Health can only be successful by involving all the important stakeholders, including community engagement

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