EFFECTIVENESS OF A FEMALE COMMUNITY HEALTH VOLUNTEER-LED PHYSICAL ACTIVITY PROMOTION INTERVENTION IN SEMI-URBAN NEPAL: AN OPEN-LABEL, CLUSTER RANDOMISED CONTROLLED TRIAL

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BACKGROUND

- Physical inactivity remains **high** globally
- It increases the **risk** of major diseases
- Even small increases in activity **improve health**

In Nepal,

- Physical activity is **declining** in semi-urban areas
- **Limited evidence** on simple, scalable solutions

BACKGROUND AND OBJECTIVE

Female Community Health Volunteers (**FCHVs**)

- Established in Nepal's health system
- Trusted and widely available
- Shown effective engagement in NCD management trials

Objective

- To evaluate the effectiveness of an FCHV-led intervention on physical activity promotion

METHODOLOGY

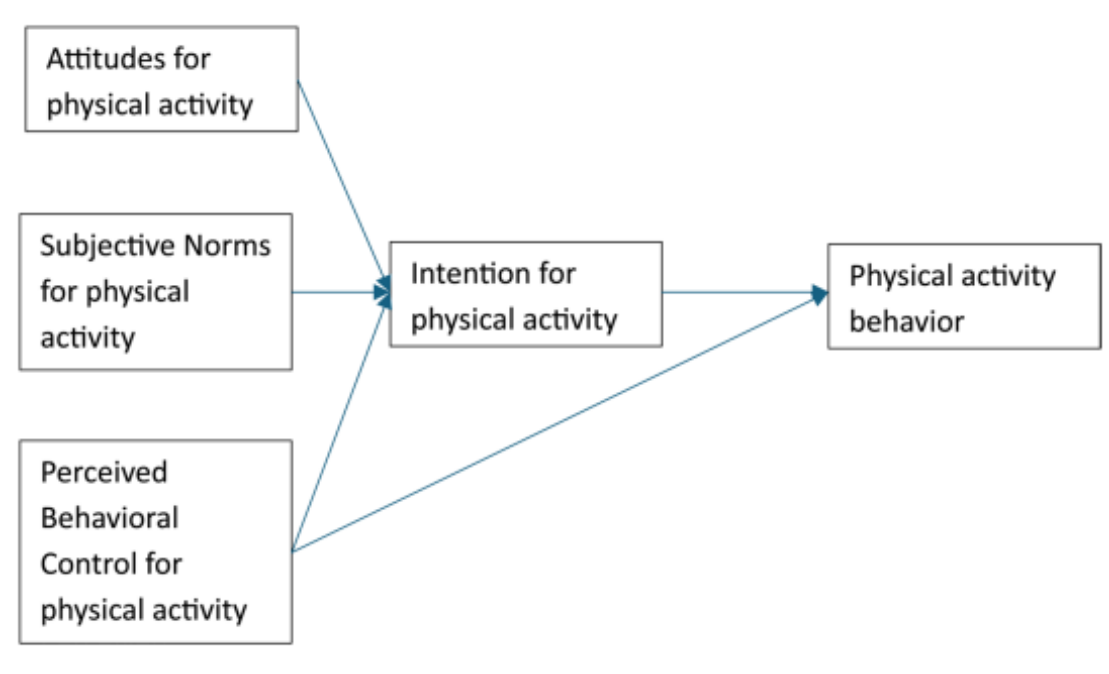
- Cluster randomized controlled trial
- 14 wards in Pokhara Metropolitan City
- 264 adults recruited (1:1 ratio)
- Six-month follow-up

METHODOLOGY

- Delivered by trained FCHVs
- Three structured **monthly home visits** during the first three months

Intervention Components:

- **Education** on health benefits of physical activity
- Demonstration of **simple, home-based** activities
- Practical strategies to integrate physical activity into **daily routines**
- Intervention **co-designed** with community members and experts
- Guided by the **Theory** of Planned Behaviour



Conceptual framework based on TPB guiding community –based PA intervention in Pokhara, Nepal

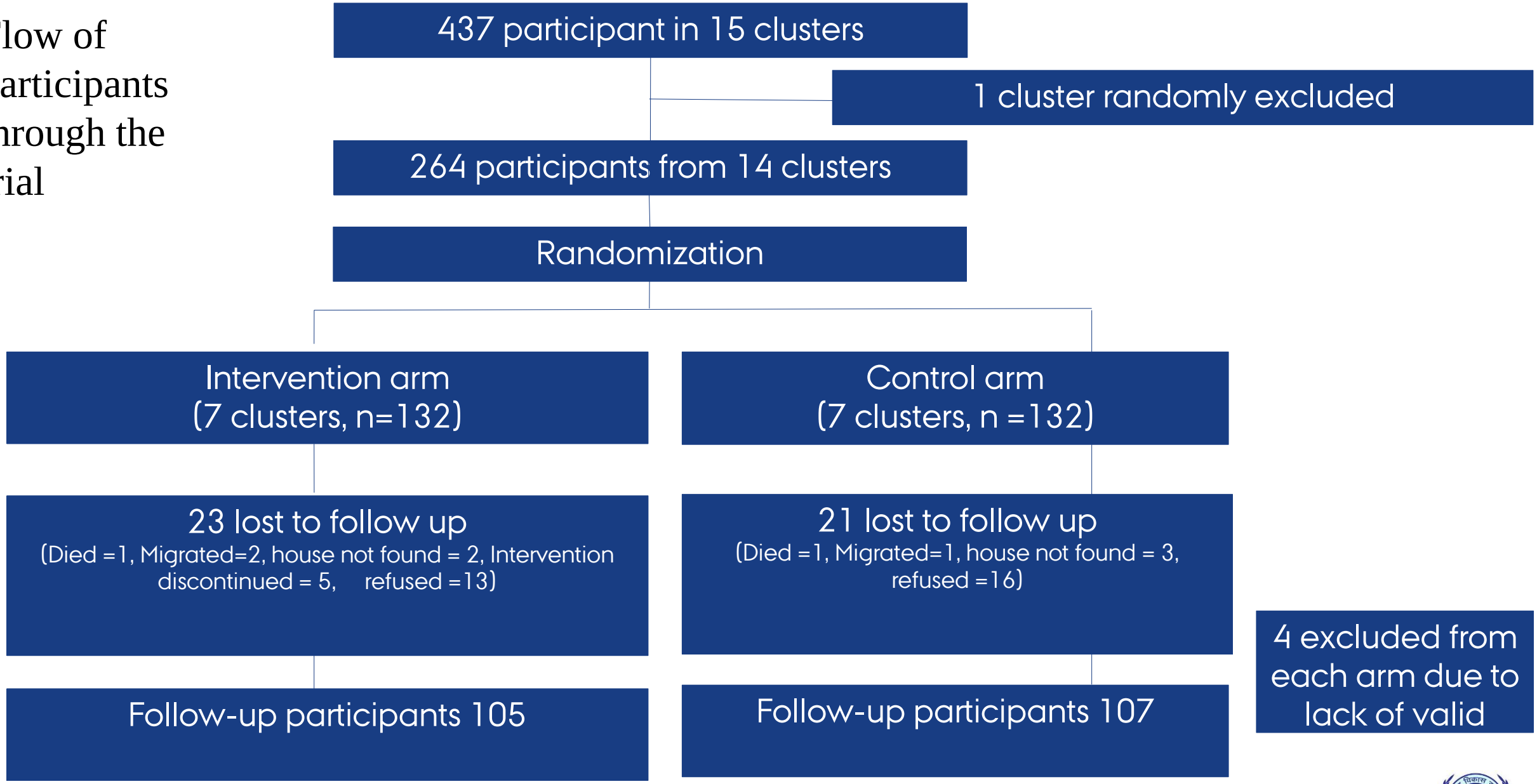
METHODOLOGY

Device-based Physical activity measurement
- Wrist-worn **accelerometers** (Axivity AX3) –
- 7-day monitoring

Primary outcome:
- Change in daily moderate-to-vigorous physical activity (**MVPA**) minutes

Secondary outcomes:
- Light-intensity activity, sedentary time
- **Sleep** quality and duration
- **Cardiometabolic indicators** and quality of **life**

Flow of participants through the trial



PRIMARY EFFECTIVENESS RESULTS

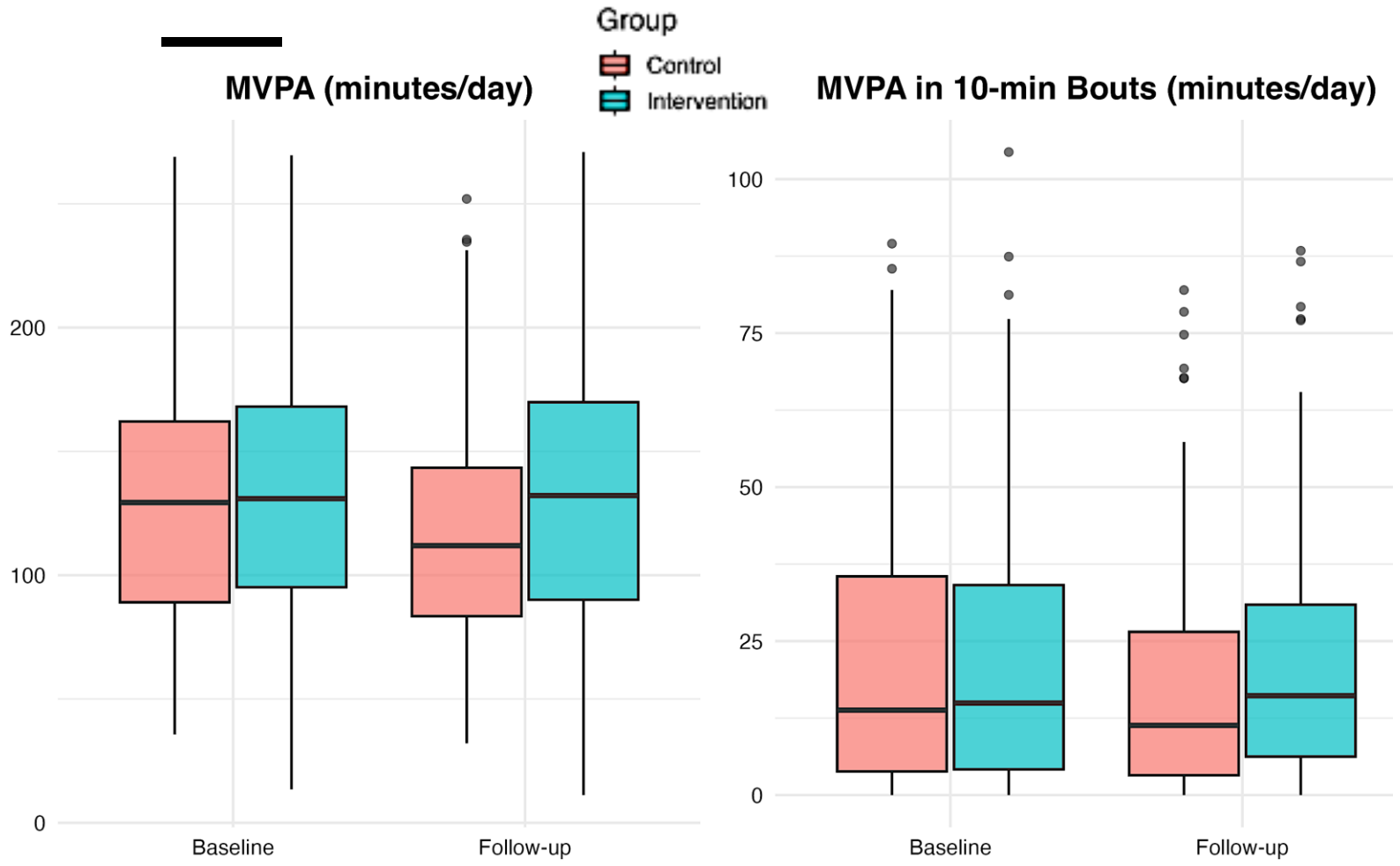
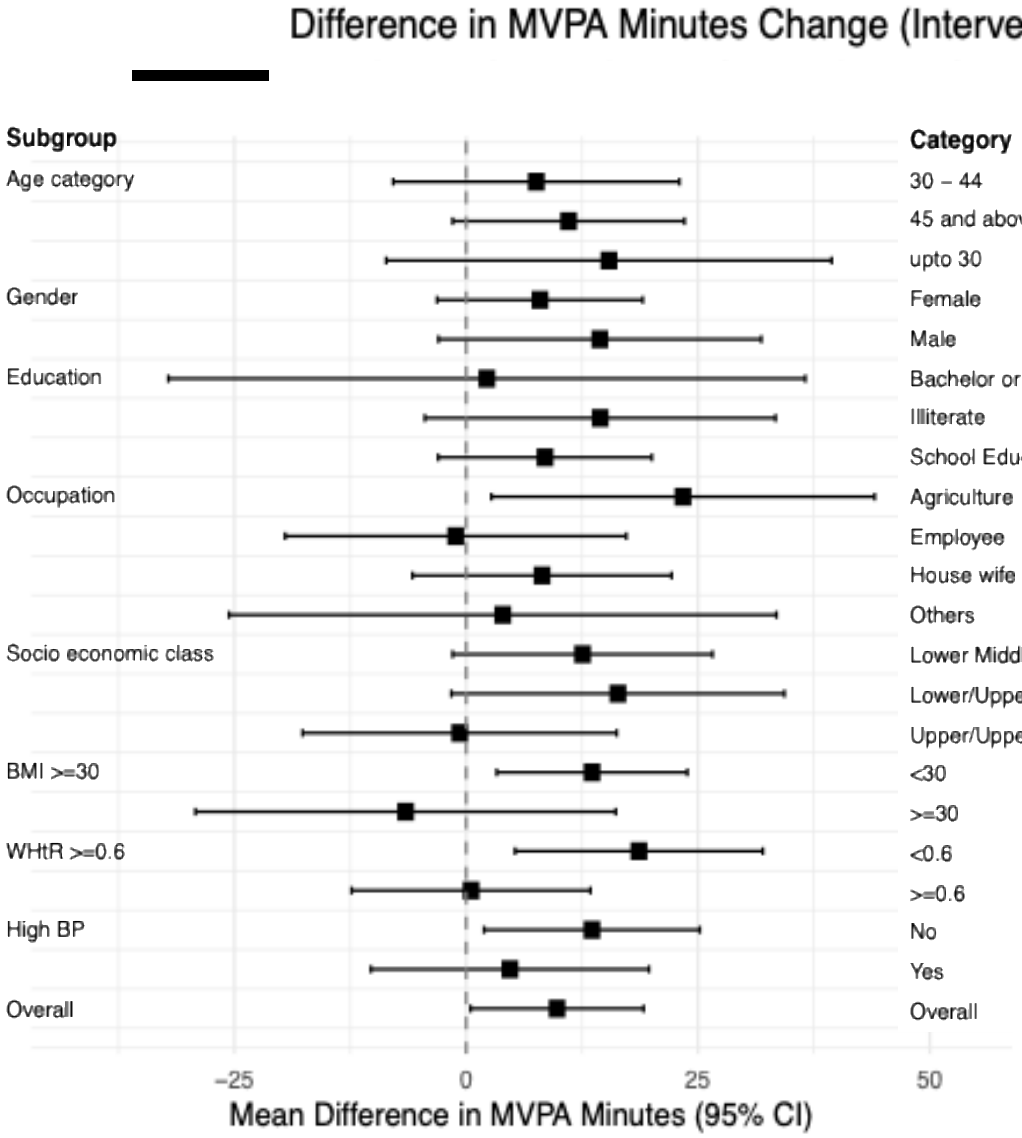


Figure 1. MVPA minutes in both groups during two different time points

- MVPA declined in both groups
- Smaller decline in intervention group
- Non-bout MVPA: **+9.8 min/day** (95% CI 0.41–19.18; p=0.041)
- 10-min bout MVPA: **+4.53 min/day** (95% CI 0.29–8.77; p=0.036)

SUBGROUP ANALYSIS: MVPA (NON-BOUT)



Subgroup	Category	Effect (95% CI)	Pvalue	Subgroup P−value
Age category	30 – 44	7.562 [−7.865, 22.989]	0.3399	0.853
	45 and above	11.04 [−1.459, 23.538]	0.0853	
	upto 30	15.398 [−8.621, 39.417]	0.2259	
Gender	Female	7.951 [−3.134, 19.036]	0.1616	0.891
	Male	14.415 [−2.992, 31.822]	0.1085	
Education	Bachelor or Above	2.226 [−32.118, 36.57]	0.9001	0.987
	Illiterate	14.449 [−4.461, 33.359]	0.1393	
	School Education	8.497 [−3.023, 20.017]	0.1502	
Occupation	Agriculture	23.379 [2.71, 44.049]	0.0303	0.742
	Employee	−1.13 [−19.526, 17.267]	0.9047	
	House wife or husband	8.182 [−5.8, 22.163]	0.2538	
	Others	3.939 [−25.582, 33.459]	0.7961	
Socio economic class	Lower Middle	12.549 [−1.463, 26.561]	0.0821	0.487
	Lower/Upper Lower	16.361 [−1.595, 34.317]	0.0783	
	Upper/Upper Middle	−0.704 [−17.638, 16.229]	0.9353	
BMI >=30	<30	13.569 [3.291, 23.847]	0.0104	0.417
	>=30	−6.532 [−29.198, 16.134]	0.5747	
WHtR >=0.6	<0.6	18.629 [5.269, 31.99]	0.0071	0.165
	>=0.6	0.524 [−12.356, 13.404]	0.9365	
High BP	No	13.559 [1.928, 25.19]	0.0235	<0.001
	Yes	4.714 [−10.279, 19.707]	0.5396	
Overall	Overall	9.797 [0.459, 19.135]	0.0408	

Subgroup analysis identified significant effect modification only by hypertension status

SECONDARY OUTCOMES

- Overall movement (average **acceleration**) declined less in the intervention arm
- Sleep quality improved modestly in the intervention group
- No statistically significant short-term effects on blood pressure, or BMI

CONCLUSIONS AND TAKEAWAYS

Conclusions

- The intervention **did not increase** physical activity
- But **slowed** the decline over time
- **Important** in populations where activity is decreasing

Takeaways

- Even small difference in activity can have **meaningful health impact**
- Community health **volunteers** can support physical activity
- **Simple** home-based education can make a difference

A BRIEF BIO

Rajan Shrestha is a PhD researcher at Aarhus University and Nepal Development Society working on physical activity epidemiology and community-based interventions in Nepal. His research uses accelerometers and other measures to understand movement behaviours and inform scalable strategies for non-communicable disease prevention.

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