

Effectiveness of Whatshap-based Nutrition Coaching to Promote Gender Specific Dietary Practices and Performance Outcomes among Adolescent Athletes in Rural Nigeria

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INTRODUCTION & AIM



•In rural Nigeria, conventional access to sports nutrition counselling is limited, and cultural gender norms often influence dietary choices.



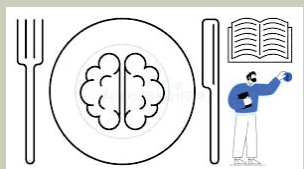
•WhatsApp presents a cost-effective, familiar, and scalable platform for delivering personalized nutrition guidance.



•This study evaluated the effectiveness of WhatsApp-based nutrition coaching in improving gender-specific dietary practices and performance outcomes among adolescent athletes in rural Oyo State, Nigeria.

METHOD

A quasi-experimental pre–post design was used involving 80 adolescent athletes (40 males, 40 females; aged 14–19 years) from two rural secondary schools in Oyo State. Baseline assessments included



•Nutrition knowledge (15-item WhatsApp quiz)

•Dietary diversity (3-day food photo diary scored using FAO dietary diversity method)

•Anthropometry (BMI-for-age)



•Performance tests (20m shuttle run for Vo₂ max, 100m sprint, handgrip strength)

Participants received a two-week gender-specific nutrition coaching intervention delivered through WhatsApp, comprising daily instructional messages, interactive prompts, and one-on-one feedback.

Post-intervention assessments repeated all baseline measures.

Data were analysed using paired t-tests and ANCOVA, with significance set at $p < 0.05$.

RESULTS & DISCUSSION

- Nutrition Knowledge: Improved significantly from 6.8 ± 2.1 to 10.9 ± 2.4 ($p < 0.001$).
- Dietary Diversity: Increased from 4.2 ± 1.1 to 5.8 ± 1.3 ($p < 0.001$). Female athletes recorded greater improvements ($+1.9$ vs $+1.4$; $p = 0.03$).
- Performance Outcomes:
 - VO₂ max increased by $+2.3$ ml/kg/min ($p = 0.002$)
 - 100 m sprint time reduced by -0.6 seconds ($p = 0.01$)
 - Handgrip strength increased by $+3.1$ kg ($p = 0.004$)
- Gender Differences: Females benefited more in dietary practices, while males showed greater sprint performance gains.
- Engagement: WhatsApp activity was high with a 92.5% response rate, indicating strong acceptability and usability among participants.

- The intervention produced positive changes in both nutrition behaviours and athletic
- The distinct gender-specific improvements highlight the importance of tailoring nutrition messaging for male and female adolescents.
- The strong engagement further indicates that WhatsApp already widely used in Nigeria, can serve as a powerful channel for adolescent health promotion. These findings align with global evidence supporting mobile

CONCLUSION

- WhatsApp-based nutrition coaching significantly improved gender-specific dietary practices and performance outcomes among adolescent athletes in rural Nigeria.
- The approach is low-cost, scalable, culturally adaptable, and suitable for integration into school-based sports and nutrition programs across similar low-resource settings.

FUTURE WORK / REFERENCES

- Expand the intervention to a larger sample and multiple rural/urban regions.
- Extend coaching duration to assess long-term retention of behaviour change.

Veloso-Pulgar, M., Fernández de Arriba, R., & Farran-Codina, A. (2025). Effects of nutrition education programmes designed to improve dietary intake and nutrition knowledge in female athletes: A systematic review. *Nutrition Research Reviews*, 38(2), 924–943. doi.org/10.1017/S0954422425100152.