





BE HE@LTHY BE MOBILE

A handbook on how to implement mobile health for physical activity

Be He@lthy, Be Mobile: a handbook on how to implement mobile health for physical activity

ISBN (WHO) 978-92-4-003347-4 (electronic version) ISBN (WHO) 978-92-4-003348-1 (print version) ISBN (ITU) 978-92-61-34831-1 (PDF) ISBN (ITU) 978-92-61-34841-0 (ePub) ISBN (ITU) 978-92-61-34851-9 (Mobi)

© World Health Organization and International Telecommunication Union, 2021

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial – ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; https:// creativecommons.org/licenses/by-nc-sa/3.0/igo).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO or ITU endorses any specific organization, products or services. The unauthorized use of the WHO or ITU names or logos is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO) or the International Telecommunication Union (ITU). Neither WHO nor ITU are responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization (http://www.wipo.int/amc/en/mediation/rules).

Suggested citation. Be He@lthy, Be Mobile: a handbook on how to implement mobile health for physical activity. Geneva: World Health Organization and International Telecommunication Union, 2021. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris Sales, rights and licensing.

Sales, rights and licensing. To purchase WHO publications, see http://apps.who.int/bookorders. ITU Publications can be obtained from ITU Bookshop http://www.itu.int/en/publications. To submit requests for commercial use and queries on rights and licensing, see http://www.who.int/about/licensing. **Third-party materials.** If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-partyowned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO or ITU concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO or ITU in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO and ITU to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO or ITU be liable for damages arising from its use.

Layout and design: Optima Graphic Design Ltd.



v vi 1

8

24

26

CONTENTS

| Acknowledgements | |
|------------------|--|
| Abbreviations | |
| Introduction | |



Operations management

| Step 1: secure programme financing | 9 |
|--|----|
| Step 2: conduct a needs assessment | 9 |
| Step 3: establish programme leadership | |
| and partnerships | 13 |
| Step 4: develop a workplan | 14 |



| Technology specifications | 16 |
|---|----|
| Selecting the appropriate technology for your context | 18 |
| Identification of other implementation needs | 19 |
| Selecting a software provider | 23 |
| The role of telecoms operators | 23 |



Content development and adaptation

Adapting an mActive programme



| Promotion, participation | |
|--|-------|
| and retention | 34 |
| Promoting an mActive programme | 35 |
| Lessons learned from BHBM mHealth programm | es in |
| developing promotional strategies | 39 |
| Participation in the mActive programme | 42 |



45



Monitoring and evaluation of mActive

| Step 1: developing SMART objectives of an mActive programme | 48 |
|---|----|
| Step 2: developing indicators | 49 |
| Step 3: plan human and financial resources for monitoring and evaluation | 51 |
| Step 4. monitoring and evaluation tools for data | |
| collection | 52 |
| Step 5: analysing the data | 53 |
| Step 6: reporting and dissemination | 53 |
| | |



Annexes

56

| Annex 1. Summary of literature reviews on mHealth a physical activity | and 57 |
|---|-----------|
| Annex 2. Behaviour change approach | 70 |
| Annex 3. Key principles of the mActive programme | 72 |
| Annex 4. Summary of mActive programme algorithm (user journey) | ו 76 |
| Annex 5. Detail of mActive message algorithm and behaviour change techniques | 77 |
| Annex 6. Sample messages from mActive message library | 80 |
| Annex 7. Lessons learned about financing mHealth programmes | 81 |
| Annex 8. Adapting content library for voice, messeng apps or chatbots | jer 85 |
| Annex 9. Engaging with telecoms operators | 88 |
| Annex 10. Two-way SMS system with aggregator and short code | 90 |
| Annex 11. Summary of core indicators (activity, outco and impact) of mActive programme | ome 91 |
| Annex 12. Summary of supplementary indicators (Activity, outcome and impact) for | ~ ~ |
| mActive programme | 94 |
| evaluation of mActive programmes | 101 |
| | |



Acknowledgements

The World Health Organization (WHO) and International Telecommunication Union (ITU) gratefully acknowledge the following contributors to this handbook:

Handbook coordination

WHO/ITU Be Healthy, Be Mobile team: Roman Chestnov, Javier Elkin, Hani Eskandar, Melissa Harper Shehadeh, Surabhi Joshi, Sameer Pujari, Ayush Shukla.

WHO Physical Activity Unit: Fiona Bull, May Myat Cho.

Content development

The preparation of this toolkit was undertaken by the Physical Activity Unit and Be Healthy, Be Mobile team at WHO headquarters. WHO acknowledges, with thanks, the contributions and guidance from members of the Be Healthy, Be Mobile mActive Informal Expert Group:

Marta Moreira Marques (University College London and Trinity College Dublin), Shifalika Goenka (Public Health Foundation of India and Center for Chronic Disease Control), Abby C King (Stanford University School of Medicine), Clover Maitland (University of Western Australia), Michael Rosenberg (University of Western Australia), Ajay Vamadevan Sarala (Goa Institute of Management, India).

In addition, WHO acknowledges the valuable contributions and review by additional delegates of an expert meeting held during the development of mActive in 2019:

Ryan Rhodes (University of Victoria), Marlene Nunes Silva (Universidade de Lisboa), Anand Amlani (Health Insights, Public Health England), Craig Nossel (Carenomics, Australia), Chryssa Stefanidou (Health Insights, Public Health England), Cristina Isabel Albuquerque Godinho (Lisbon University Institute).

Guidance

WHO: Dr Naoko Yamamoto, Assistant Director-General / Dr Ruediger Krech, Director, Health Promotion.

Be Healthy, Be Mobile Steering Committee members:

WHO: Mr Bernardo Mariano Jr, Director, Digital Health and Innovations; Dr Ren Minghui, Assistant Director-General/Dr Bente Mikkelsen, Director, Noncommunicable Diseases.

ITU: Doreen Bogdan-Martin, Director, Telecommunication Development Bureau; Stephen Bereaux, Deputy to Director, Telecommunication Development Bureau; Marco Obiso, Chief, AI Digital Network and Society Department, Telecommunication Development Bureau.

Abbreviations

BHBM

- Be He@lthy, Be Mobile COPD chronic obstructive pulmonary disease GIF Graphics Interchange Format GPS **Global Positioning System** ITU International Telecommunication Union IVR interactive voice response MMS multimedia messaging service NHS National Health Service, United Kingdom SaaS software as a service SD standard deviation SDG United Nations Sustainable Development Goal **SMART** specific, measurable, attainable, relevant and timely standardized mean difference SMD SMS short message service TAG technical advisory group
- World Health Organization wно

Introduction

PHYSICAL ACTIVITY AND HEALTH

Regular physical activity is good for heart, body and mind. It is a key component of national action on the prevention and management of noncommunicable diseases, including heart disease, stroke, type-2 diabetes and some cancers. It helps in the prevention and management of hypertension and the maintenance of a healthy weight, and can improve mental health, cognitive function and overall well-being.^{1,2} Regular physical activity is recommended for people of all ages and abilities, including those people living with chronic disease and disability and pregnant and post-partum women.

Physical activity is also an important part of healthy ageing. Older adults can benefit from regular physical activity to maintain balance and muscular strength, prevent falls and injuries from falls and improve mental health (including memory and cognitive function). Participation in appropriate and enjoyable physical activity can also be a way to maintain social contacts and reduce feelings of isolation and loneliness.¹ The benefits of physical activity extend beyond direct health benefits; policy actions and programmes that promote physical activity also improve the environment. For example, when countries promote and support more people in walking and cycling regularly, fewer people will use personal transportation for short trips and will thereby reduce their use of fossil fuel, lower congestion and improve air quality. These wider impacts of policy and programmes aimed at increasing physical activity, particularly through walking, can contribute to healthier, cleaner cities and communities, mitigate the effects of climate change and support the achievement of the United Nations Sustainable Development Goals (SDGs).³

The latest global estimates show that approximately one quarter of adults do not meet the recommended levels of activity.⁴ However, levels of physical inactivity vary both within and between countries and can be as high as one half of the adult population, or higher in some countries. Older adults, women, people living with chronic disease and those living in disadvantaged communities are among the least active in the majority of countries.⁴ Increasing levels of physical activity in the least active population is important focus of public health programmes. **Figure 1** shows that the greatest health gains in noncommunicable disease prevention come from increasing physical activity from very low levels up to the recommended level of at least 150 minutes (or 2.5 hours) per week in adults. Notably, greater benefits come from further increasing activity up to 300 mins and above per week in adults. It is important to note that, at these levels, and by choosing walking, there are very low risks of injury or adverse events.

FIGURE 1. _____ BENEFITS AND RISKS OF PHYSICAL ACTIVITY



Source: WHO Guidelines on Physical Activity and Sedentary Behaviour, 2020¹

Why are people inactive?

Although the majority of people are aware that physical activity is a good for your health, a large proportion of the world's population do not engage in it often enough to gain the many physical and mental health benefits it offers. Understanding why people do and do not engage in physical activity is therefore important to quide and it requires a certain level of skill and fitness. Exercise can be perceived negatively and be associated with difficulty and discomfort. It is also still quite common for physical activity to be understood as something that has to be done in a gym or fitness centre, which can create a perceived economic barrier to participation

预览已结束, 完整报告链接和二维码如下



https://www.yunbaogao.cn/report/index/report?reportId=5 23471