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Design and Multi-Country Validation of Text Messages for an mHealth Intervention for Primary Prevention of Progression to Hypertension in Latin America.

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BACKGROUND: Mobile health (mHealth) has been posited to contribute to the reduction in health gaps and has shown fast and widespread growth in developing countries. This growth demands understanding of, and preparedness for, local cultural contexts.
OBJECTIVE: To describe the design and validation of text messages (short message service, SMS) that will be used for an mHealth behavioral change intervention to prevent hypertension in three Latin American countries: Argentina, Guatemala, and Peru.
METHODS: An initial set of 64 SMS text messages were designed to promote healthy lifestyles among individuals in different stages of behavior change, addressing four key domains: salt and sodium intake, fruit and vegetable intake, consumption of high fat and sugar foods, and physical activity. The 64 SMS text messages were organized into nine subsets for field validation. In each country 36 people were recruited, half of them being male. Of the participants, 4 per country evaluated

each subset of SMS text messages, which contained between 6 and 8 SMS text messages regarding different key domains and stages of change. The understanding and appeal of each SMS text message was assessed using a 7-item questionnaire. The understanding and appeal ratings were used to reach a final set of 56 SMS text messages.

RESULTS: Overall, each of the 64 SMS text messages received a total of 12 evaluations (4 per country). The majority of evaluations-742 out of a total of 767 (96.7%) valid responses-revealed an adequate understanding of the key idea contained in the SMS text message. On a scale from 1 to 10, the average appeal score was 8.7 points, with a range of 4 to 10 points. Based on their low scores, 8 SMS text messages per country were discarded. Once the final set of 56 SMS text messages was established, and based on feedback obtained in the field, wording and content of some SMS text messages were improved. Of the final set, 9, 8, and 16 of the SMS text messages were improved based on participant evaluations from Argentina, Guatemala, and Peru, respectively. Most SMS text messages selected for the final set (49/56, 88%) were the same in all countries, except for small wording differences.

CONCLUSIONS: The final set of SMS text messages produced had very high rates of understanding and appeal in three different Latin American countries. This study highlights the importance of developing and validating a package of simple, preventative SMS text messages, grounded in evidence and theory, across three different Latin American countries with active engagement of end users.

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