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TERMS OF REFERENCE FOR THE DEVELOPMENT OF THE MENTAL HEALTH MOBILE APPLICATIONS FOR #MENTALHEALTHPH

PART A. OVERALL PURPOSE

The primary task of the provider is to develop, design, and launch two (2) evidence-based mobile applications on mental health and wellbeing for Filipinos. The Philippine Council for Health Research and Development of the Department of Science and Technology (PCHRD-DOST) has awarded #MentalHealthPH a multi-year research grant for this ambitious project. The research team (RT) is seeking the strategic and empathic direction of an app development team (ADT) to co-create these mobile applications.

PART B. PROJECT DESCRIPTION

Depression and anxiety are commonly occurring disorders linked to impaired functioning and poor quality of life. The treatment of depression and anxiety, both pharmacologically and with non-pharmacological interventions, is an important area for research. Mobile health (mhealth) technologies are increasingly being recognized as an effective means through which mental health interventions can be disseminated in the population. However, this growth has two key limitations. First, little data are available regarding their efficacy and effectiveness. Second, with most of these apps originating from more developed countries with a more Western lens with which to conceptualize psychology and behavioral science, much more limited data is available regarding their cultural and ethical applicability to the Filipino context.

The PCHRD-funded research will develop mobile-based applications, including an automated conversation agent component (chatbot), to deliver psychosocial interventions. Mobile devices are firmly considered as essential personal or household items. Mobile phones, in particular, are no longer considered a “new” medium, and in the Philippines, nearly 73 percent of households own at least one mobile device. Mobile-based mental health therefore offers significant opportunities to make psychosocial tools and services more accessible and acceptable to Filipinos. The general objective of this project is to develop and test the effectiveness of mobile-based applications in promoting mental wellbeing and reducing psychological distress.

The project has been divided into eight stages, each with a specific research design and implementation procedures. At the final stage, the two mobile applications will be evaluated in a randomized controlled trial. The ADT will assist the #MentalHealthPH RT in all stages.



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PART C. SCOPE OF SERVICES

Services

The ADT will design, create, and update two (2) mobile applications. One mobile application will address depressive and anxiety-related symptoms (DARs); the other, general psychological distress. The ADT will provide technical leadership throughout the app development cycle—from ideation phase to user experience design to testing and to deployment—based on the research evidence gathered by the RT.

The following basic requirements for the apps have been identified. This list is not exhaustive and might yet expand based on the research findings and on the collective expertise of the ADT.

General Objectives of the Mobile Applications:

1. The DARs Application should meet the following objectives:
 - a. Documents user responses to generate appropriate decision support system
 - b. Provides behavioral activation activities
 - c. Offers access to referrals
2. General Psychological Distress Application should meet the following objectives:
 - a. Converses with the user (i.e., menu-based chatbot) to generate appropriate decision support
 - b. Provides behavioral activation activities
 - c. Offers community engagement feature

Functional Requirements:

These are the minimum requirements for both applications:

1. User registration and authentication
2. Content management system or other similar tool so that the research team may upload, update, or otherwise revise content onto the apps without the need for specialized technical knowledge or skills
3. Mobile analytics dashboard to monitor users' engagement with the app
4. Language selection

Recommended Functions:

The following are recommended functions that could be included by the ADT to help in formulating the concept proposal. These functions may or may not be included based on the research evidence. However, the successful proposal should be able to include these functions, if warranted.

1. Behavioral activation activities may include:
 - a. Mood tracker
 - b. Journal function



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- c. Personalized interventions (e.g., breathing exercises, meditation exercise, invitation to read books/ listen to music)
2. User registration and authentication may include:
 - a. Assessment tools
 - b. App guide (e.g., how-to video)
3. Daily notifications
 - a. This feature encourages the daily use of the app and its functions, however, users can also choose to disable them

Non-Functional Requirements:

1. The mobile apps should be accessible on Android-based mobile phones. Other platforms (e.g., iOS) and other mobile devices (e.g., tablet) are possible but warrant further discussions with the RT and inputs from the ADT.
2. The mobile apps should simulate human conversation via voice and/or text communication (chatbot). However, the chatbot is not expected to operate in all parts of the app. For example, the chatbot may be a pop-up when a user opens the app and may function to initially engage the user. The user may thereafter navigate the app without the chatbot.
3. The primary functions and content of the apps should continue to operate without an internet connection. For example, a user should be able to access and use the depression-related interventions within the app without a wifi signal.
4. The apps should be fully automated. There will be no human supervision.
5. The main operating language of the apps is (American) English, but the research will expand to include Filipino (Tagalog), Ilocano, Bicolano, Hiligaynon, Cebuano and Waray. The apps should be capable of expanding to these languages.
6. The apps are for the Filipino user. They are not for clinical practitioners nor other “knowledge experts”. The apps should be attractive in design and effective in its interventions for the “everyday” user.
7. The operationalization actions of the apps are considered Type II (Moderate)¹. The mental health condition may be serious in its severity. However, the significance of the information or intervention provided by the apps may check for clinical symptoms but do not diagnose. The apps may help self-manage these symptoms but are not regarded as treatment plans. The apps are not medical devices.
8. The apps should be interactive, engaging, and simple. They are not repositories of mental health PDFs, modules, or other “knowledge” documents. The apps are not “mini” websites.
9. Security, safety, and data protection should be a priority. Integrity and inclusiveness—including matters on sexual orientation, gender identity, and gender expression—are principles of this project.

¹ World Economic Forum. Chatbots RESET: A framework for governing responsible use of conversational AI in healthcare. December 2020.



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Expected Outputs

1. Creation of a detailed work plan
2. Development of a Product Requirements Document (PRD)
3. Creation and description of wireframes, features, interface, and other functionality
4. Design proposal of three (3) options for review per app
5. Development, configuration, review, and finalization of alpha version per app
6. Development, configuration, review, and finalization of beta version per app
7. Implementation, monitoring, and evaluation of design, content, functionalities, and overall performance, quality, and effectiveness
8. Consultation with RT to harvest and incorporate research data into design and content
9. Consultation with RT for quality assurance, including testing and recalibrating
10. Attendance to team meetings for regular progress reports
11. Finalization from quality testing, security, and approval
12. Assistance to RT for app stores application, submission, and launch

Target Completion

Services delivered by the ADT will take place over 18-19 months with an expected start date in February 2022. Continuance into Year 2 is based on provider performance in Year 1.

PART D. INSTITUTIONAL ARRANGEMENT AND LOCATION

The service provider will report to the App Development Unit. The Unit is headed by a research co-investigator. The RT is headed by the Principal Investigator (Project Leader). The service provider is expected to continuously collaborate with the Unit and the RT. No product design, content, feature, or other component or functionality can go forward without the explicit approval of the RT.

The ADT may be “home-based” or may be in their company/organization office. The provider is not expected to physically report to #MentalHealthPH. However, if safe to do so and allowed by public health standards and policies, the provider may be asked to meet face-to-face with the RT in Metro Manila.

PART E. QUALIFICATION OF THE PREFERRED SERVICE PROVIDER

1. The service provider should be a technology company or team that is duly licensed and/or registered with the appropriate government bodies to conduct such business.²

² The Research Team understands that app development teams are rare in the Philippines. The RT is also a proponent of creating opportunities for growing and passionate technology teams that might not have company or organization backing or support. Many might be Filipinos, for example, with the expertise and skills we are seeking but are “freelancers”. We welcome applications from these teams



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2. The provider should have a proven record of mobile-based applications.
3. The provider should have a team of highly skilled technology designers, experts, coders, and engineers, digital or social media experts, as well as mobile platform experts.
4. Ideal, but not required, that the provider is adept of Agile Methodology or Kanban.
5. The team leader of the service provider should have at least 5 years of relevant technology, engineering, or innovations experience.
6. The provider should possess all the necessary hardware, software, and equipment to design, develop, configure, test, implement, and evaluate the apps.
7. Familiarity or experience with mental health or psychosocial mobile-based applications is an asset but not a requirement.
8. Working knowledge of mental healthcare, laws and policies, and the overall mental health landscape in the Philippines is advantageous.

PART F. SCOPE OF PRICE AND SCHEDULE OF PAYMENTS

The payments to the service provider will be “all-in”. The payments cover professional fees, maintenance expenses, operating costs, equipment, and other costs for the design, development, implementation, finalization, and launch of the mobile apps.

The payments will be made based on deliverables. The initial payment will be made once the following have been finalized and approved by the RT: (1) detailed work plan, (2) Product Requirements Document, and (3) initial wireframes. This initial payment will be 20% of the allotted first-year budget item for the app development.

PART G. DATA AND TECHNOLOGY OWNERSHIP

The technology will be owned by #MentalHealthPH. The provider shall give all rights and ownership in the software product including but not limited to source code, including right to license the product to #MentalHealthPH. Source codes, stored procedures, API, etc., should all be transferred to #MentalHealthPH after the engagement.

PART H. SUPPORT AND MAINTENANCE

Technical support and system maintenance should be provided for up to 3 months after the technology transfer and during the culminating implementation of the mobile application.

with the caveat that due diligence will be especially rigorous. Only a team, not an individual, can apply.



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PART I. APPLICATION AND PRESENTATION

The following should be submitted:

1. A **1-page cover letter** (which may be in the body of an email)
2. A **resume or CV** of the team leader
3. A **1-page summary of the team** to include the following: (a) full names, (b) roles and responsibilities within the project team, and (c) relevant background and experience of each team member.
4. A **summary of proven record** (no more than 2 pages, single-spaced) of mobile-based application development, describing experience with similar projects, from design to full implementation
 - a. If the app(s) is publicly available (i.e., downloadable from Google Play Store), the service provider is requested to disclose these so that the RT may review the app(s).
 - b. If the app(s) is not publicly available (e.g., developed for a company or organization for internal use), the service provider is requested to thoroughly describe what the apps design, function, etc., whilst respecting proprietary information or other nondisclosure agreements.
5. A **concept proposal** (no more than 5 pages, single-spaced) for the two (2) apps, to including (a) a description of the mobile platforms and (b) a description of how the service provider's unique expertise, experience, or vision will improve existing delivery of mobile mental health apps currently in the market
6. A **financial proposal** that outlines the "all-in" fixed total contract price
7. An **estimated timeline** for the completion of each step of the two (2) apps, including the cost per step
8. The concept proposal, financial proposal, and estimate timeline should consider the following **parameters**:
 - a. The beta version of App #1 (on depression and anxiety) should be completed by March 2022.
 - b. App #1 will be tested, evaluated, and reconfigured in a 6-month feasibility study through September 2022.
 - c. App #1 will be tested, evaluated, reconfigured in multiple languages in a multi-site pilot study beginning in October 2022.
 - d. App #1 will be implemented and evaluated in a randomized controlled trial in November 2022.
 - e. The beta version of App #2 (on psychological distress) should be completed by January 2023.
 - f. App #2 will be tested, evaluated, and reconfigured through February 2023.
 - g. App #2 will be tested, evaluated, reconfigured in multiple languages in a multi-site pilot study beginning in March 2023.
 - h. App #1 and App #2 will be implemented and evaluated in a randomized controlled trial beginning in May 2023.
 - i. Both apps will be submitted to app stores in August 2023.



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- j. Both apps will be launched in August 2023.
- k. Contractual engagement with the service provider concludes in August 2023.
- 9. Exceptional applicants will be invited for an online interview and may be asked to present their proposal.

The application should be submitted to the following:

Roy O. Dahildahil, RMT, MSc
Executive Director, MentalHealthPH, Inc.
rdahildahil@mentalhealthph.org

The following should be cc'd in the application:

Ronald Del Castillo, PsyD, MPH, FRSPH
Principal Investigator
ronald@diwamentalth.com

Janelle Panganiban
Project Officer
jpanganiban@mentalhealthph.org

PART J. SELECTION

The best proposal will be considered on combined scoring. The team's overall qualification (including team expertise and proven record) and concept proposal will be weighted up to 75%. The financial proposal and other parameters will be considered for the remaining 25%.

APPLICATIONS/PROPOSALS ARE DUE ON FEBRUARY 11, 2022.