

# IMPLEMENTATION OF TELEREHABILITATION SERVICES IN A LOCAL COMMUNITY IN CAVITE: A QUALITATIVE CASE STUDY

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**Abstract:** The COVID-19 pandemic remarkably affects the world's healthcare system. The healthcare service access and delivery system were affected worldwide. In the Philippines, hospitals nationwide defer non-urgent consults and rehabilitation services because of panic, fear, and anxiety about contracting the virus. Telerehabilitation services were implemented to meet the rehabilitation services gaps brought about by the pandemic in the community. This qualitative case study evaluates the implementation of Telerehabilitation services in a local community in the Philippines. A qualitative case study method was used as it utilized secondary data from audiovisual recordings, documents, and observations from Telerehabilitation sessions from Aug 2020 – May 2021. Thematic analysis identified four emerging themes regarding challenges experienced in the program implementation, namely, the technological factors, patient factors, approach and strategies, and infrastructure. At the same time, the lessons learned from the case study can be summed up into two themes: the value of partnership and bridging the gap. From the findings, a sustainable, effective, and safe digital physical therapy program can be established using the resources of both public and private organizations as its strength. This study can guide other local communities to establish a Telerehabilitation program to increase access to rehabilitation services using Public-Private Partnerships.

**Keywords:** telerehabilitation, eHealth, physical therapy, patient experience

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## Introduction

In the early year of 2020, an unknown type of coronavirus from Asia ravaged the world. This novel virus spreads rapidly and causes flu-like symptoms, illness, and even death. This outbreak prompted The World Health Organization (WHO) to declare a Public Health Emergency of International Concern and eventually claim it as a pandemic (Cucinotta, D., & Vanelli, M., 2020). Around seven hundred million people globally have been infected with COVID-19, and six million have died (WHO, n.d.). COVID-19 presents remarkable effects on the world's economy and development. Many companies shut down their operations because of lockdowns resulting in loss of jobs and livelihood worldwide. The healthcare system was also severely affected; countries with poor and vulnerable healthcare systems collapsed. Even countries with well-organized and structured healthcare systems suffered because of the overwhelming influx of patients, almost reaching the verge of healthcare failure (Blumenthal et al., 2020).

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The Philippines also suffered the same faith as its neighboring country. Therefore, to control and mitigate the spread, the national government ordered a nationwide lockdown, considered the most extended globally (See, 2021), and followed different quarantine guidelines nationwide. However, nationwide lockdown and quarantine resulted in severe economic loss and recession (Shinozaki & Rao,2021); the school needed to shut down its operation and convert to online learning, bringing new challenges to parents, teachers, and students (Future Learn,2021). In addition, the healthcare service access and delivery system were also affected. For example, community quarantines, strict lockdowns, and interprovince travel restrictions hamper the mobility of patients requiring specialized care from a tertiary or more advanced and specialized hospital (Maravilla et al., 2022).

In addition, the surge of COVID patients diverted the hospital's resources nationwide to accommodate the influx of patients. Panic, fear, and anxiety of clinicians and patients to seek medical consults prompted hospitals nationwide to defer non-urgent consults, diagnostics, surgeries, and even therapy and Rehabilitation (Stone & Yu, 2020). In addition, through referral systems, government and private hospitals implemented telemedicine services to reduce face-to-face consultation.

Telemedicine involves using information communication technology, particularly communication devices that allow interactive communication between the clinician and patients to facilitate the exchange of information used in evaluation and treatment (Bashshur, 2014). Telerehabilitation is a branch of Telemedicine that provides clinical rehabilitation services focusing on evaluation, diagnosis, and treatment. Further, telerehabilitation services can be delivered to patients in various ways, including 2-way real-time telerehabilitation sessions with audio and video or remote assessment of recorded records, videos, or images (Prvu & Resnik, 2020).

Compared to other medical and surgical services, rehabilitation services are essential during the pandemic (Prvu et al., 2020). Rehabilitation services through physical therapy improve an individual's physical and cognitive function, thus, optimizing health outcomes. Telerehabilitation is considered an effective strategy for ensuring the continuity of rehabilitation services across the lifespan (Brigo et al., 2022). Further, studies show that Telerehabilitation can be considered an effective, acceptable strategy compared with face-to-face Rehabilitation (Seron et al., 2021). This case study explores the implementation of a telerehabilitation program in a local community in the Philippines during the pandemic.

The Technology Acceptance Model by Davis (1989) was used as the theoretical concept of this research. According to the model, technology acceptance has three stages. First, external factors, such as the design of the technology, can elicit a response to whether the technology is valuable and easy to use based on the end user's perception. Second, these perceptions can affect the attitude of the end user toward the technology and eventually affect the end user's behavior. (Marikyan, D. & Papagiannidis, S., 2023).

This qualitative case study explores the implementation of a telerehabilitation program in a local community in the Philippines during the pandemic. Specifically, this study addressed the following questions:

1. How did the institution establish the telerehabilitation program?
2. What are the challenges faced during the telerehabilitation program implementation?
3. What lessons can be learned through the implementation of the telerehabilitation program?

## **Materials and Methods**

This study utilized a qualitative case study to explore the implementation of a telerehabilitation program in a local community. A qualitative research design involves exploring and providing insights into the problems experienced by an individual or organization (Moser, 2017). It answers "how and "why" and explains trends, patterns, and processes that are difficult to quantify (Foley, 2015). Further, a case study design was used because of the case's uniqueness. A case study is a comprehensive research strategy investigating cases concerning a particular phenomenon of interest (Yazan et al., 2016). One distinct feature of a case study is setting the study's boundaries or bounded system (Yin, 2008). The present case study is Project AdDPT, an innovative way of delivering a physical therapy program through Telerehabilitation conceptualized by a selected Higher Institutional Institution in Cavite. The bounded system was the higher education institution, the partner local government unit, the physical therapists, and the patients.

The study used documents and observations from August 2020 to May 2021 to answer the research questions. In addition, selected audiovisual recordings from Telerehabilitation sessions were used and analyzed for this case study.

The researcher is the primary instrument for gathering and analyzing data in this study (Wa-Mbaleka, 2020). The researcher utilized a triangulation matrix to identify the data sources that would answer the research question.

*Table 1: Triangulation Matrix*

<b>Research Question</b>	<b>Data Source 1</b>	<b>Data Source 2</b>	<b>Data Source 3</b>
1. How did the institution establish the telerehabilitation program?	Document		
2. What are the challenges faced during the telerehabilitation program implementation?	Document	Audio Visual Materials	Observation
3. What lessons can be learned through	Document	Audio Visual	Observation

the implementation of the telerehabilitation program?	Materials
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## Results and Discussion

The collected data were analyzed to answer the study's research questions: 1. How did the institution establish the telerehabilitation program? 2. What are the challenges faced during the telerehabilitation program implementation? 3. What lessons can be learned by implementing the telerehabilitation program?

### *1. How did the institution establish the telerehabilitation program?*

In answering the first research question, the researcher analyzed the data into two main vital points (a) the conceptualization stage and (b) the implementation stage.

#### *Conceptualization Stage*

COVID-19 Inter-Agency Task Force For The Management Of Emerging Infectious Diseases (IATF) imposed quarantine status nationwide, affecting the mobility of people. In addition, the strict implementation of the quarantine severely affected schools, the economy, and the healthcare delivery system. As a result, the Department of Health and the National Privacy Commission developed a telemedicine framework that allows patients to secure medical consults without going to the hospitals. The framework will address the healthcare delivery system gap brought about by the pandemic.

Compared to the traditional face-to-face rehabilitation session, the implementation of Telerehabilitation requires technology and digital infrastructure. The Higher Education Institution conducted SWOT and PESTLE Analyses to assess the partner local government unit's capability. Based on the Analysis, the partner LGU can provide the facilities and digital infrastructure, while the HEI will provide the telerehabilitation program and the workforce.

Project AdDEPT was conceptualized to provide physical therapy sessions using the most common social media platform accessible to both the patient and the physical therapist. AdDEPT is the acronym for Adapting to the new healthcare norm through Digital Physical Therapy Practice. This partnership aims to provide an innovative way of delivering quality physical therapy services to various clientele and provide services, particularly for the more vulnerable and disadvantaged community. The program aims to develop a sustainable healthcare access and delivery model that uses innovative technology in physical therapy during the pandemic.

#### *Implementation Stage*

Several preparations were made before the start of the implementation. Patients were gathered for orientation, and informed consent was sought. The orientation program discussed the following: (1)

the benefits and limitations of digital-physical therapy, (2) how to navigate the digital platform, and (3) what to do in case of emergencies during the session. Simulation activities were done to check the integrity of the digital-physical therapy platform. Simulation activity includes (1) the conduct of digital-physical therapy, (2) the security of information before, during, and after each session, and (3) checking the internet stability of the end-user.

A licensed physical therapist supervised the entire Telerehabilitation session during the actual implementation. In addition, each session was recorded and stored in a secured database adhering to the Data Privacy Act. Further, the patient's status and condition after the session were documented for adverse effects after each session.

## ***2. What are the challenges faced during the telerehabilitation program implementation?***

Challenges encountered during the implementation of digital-physical therapy were categorized into four main themes: (a) technological factors, (b) patient factors, (c) approach and strategies, and (d) infrastructure.

### ***Theme 1: Technological Factor***

Telerehabilitation revolves around a safe and stable technology for both healthcare providers and end-users (Kim et al., 2022). The community and healthcare providers should be linked via secure audio-video teleconferencing. The lack of laptops or mobile phones needed for the telerehabilitation session is one of the main issues faced by the end user. According to one patient "Wala po kaming laptop na pwedeng gamitin". This problem caused the inaccessibility of the program to the program end-users. According to Rabanifar & Abdi (2021), A telerehabilitation setup requires the right technology, and implementing the program is typically difficult.. Further, Furthermore, a one-size-fits-all approach is inappropriate for Telerehabilitation, which should be flexible to the end users' various situations.

Aside from the equipment, patients and physical therapists encountered internet connectivity problems. For example, in one recorded session, the physical therapist experienced the blurring of video and movement lagging. Sounds were distorted and incomprehensible. In addition, intermittent signal interruptions can result in poor session outcomes. In the study of Leochico et al. (2020), they found that internet access was the most pressing problem in putting up Telemedicine in the Philippines. In addition, video consultations were hampered by the inability of everyone to access technology, inadequate internet connections, and the slow spread of rapid internet networks, particularly in developing nations (Ftouni et al., 2022).

Another problem faced during the program's implementation is the increasing cost of internet load. Based on the narratives of the end-users, the financial cost of internet loads and subscriptions limits their participation in the digital-physical therapy session, according to one patient. "Sir, pag naputol po ang internet hindi na po ako makakacconnect kasi wala na po budget para sa load. Next session

nalang po" Internet load can add to the increasing financial burden of the end-user aside from their medications and other health-related expenses. Pedron (2018) states that patients' compliance with physical therapy services is due to the financial difficulty experienced by the patient or the family members. This situation results from decreasing patient compliance with the Telerehabilitation session and can prolong the recovery of patients.

Ideally, a secure and encrypted platform should be utilized to protect data privacy during each session. Applications such as Google Meet and Zoom were the standard platform used by healthcare providers engaged in Telemedicine; however, these applications require technical know-how to install, sign in and use. In addition, the complexity of the application resulted in frequent disconnection or missed sessions. Based on the patient's narrative, "Mam puede po bang facebook messenger nalang? Hindi ko po alam itong google". Another patient also narrated that "Sir wala pong zoom ang phone ko, hindi po kasi ako marunong". This is similar to the study of Rabanifar & Abdi (2021), in which the absence of widespread telehealth acceptability, the knowledge and competence gaps, and concerns about protecting personal data were also identified as barriers. A lack of digital knowledge is also a barrier to implementing Telerehabilitation (Leochico et al., 2020).

### *Theme 2: Patient Factor*

Telerehabilitation is an innovative way to deliver physical therapy services online. However, Telerehabilitation in the Philippines is considered an emerging field poorly explored compared to other countries. Patients buying into the program is a significant concern for the implementor of the program. Leochico (2020) pointed out that skepticism and misconception of a patient about Telerehabilitation are common problems of Telemedicine. LGU program coordinator stated that "Nagdadalawang isip po ang pasyente na mag pa physical therapy". In addition, according to one patient "Effective po ba ang therapy kahit sa video lang ito?" The project's success depends on the end-users trust to participate in the telerehabilitation session. Moreso, improved health behavior, quality of life, and satisfaction with the treatment given were associated with trust in their healthcare provider (Birkhäuser et al., 2017)

Poor compliance with Telerehabilitation was also an issue during the project implementation. Based on the researcher's observation, knowledge about their condition contributed to the poor compliance of patients every session. It is evident during one pt evaluation session when the physical therapist asked the patients about their condition, and the patient replied, "Hindi ko po alam kung stroke ba ito? Basta humina lang ang katawan ko.". Further, when asked about the reason for physical therapy, the patient replied, "Hindi ko nga alam kung may magagawa pa ang physical therapy sa akin." Based on the narratives, the patient has little or no knowledge about their condition that can affect health outcomes. Patients who are knowledgeable about their condition are likely to adhere to the interventions given (Awwad et al., 2015)

### *Theme 3: Approach and Strategies*

The practice of physical therapy involves direct manual contact with the patient. Further, assessment and interventions require observation and palpation of body structure. Telerehabilitation limits the manual contact and interaction between the physical therapist and the patient. The physical therapist will demonstrate the movement in a Telerehabilitation session and ask questions. In addition, all assessments were based on the subjective findings and observations of the physical therapist.

During one Telerehabilitation session, the physical therapist instructed the patient “pakitaas po ang kaliwang kamay nyo, masakit po ba? May nararamdaman po ba kayo click or natunog?” Further, physical therapist narrated that “Hindi natin mahawakan yung balikat nyo, para malaman natin kung may natunog o crepitus”. The development of effective and accurate management for the patient is affected due to some limitations in assessment. These findings coincide with the study of Odole et al. (2015) that physiotherapists-patients need contact during physical therapy.

Another challenge identified was the correct execution of physical therapy intervention and management during a session. Physical therapy interventions primarily consisted of therapeutic exercises to address the patient's impairment. Therefore, physical therapists should do patients' stretching, balance exercises, and neurodevelopmental techniques. However, during Telerehabilitation sessions, only exercises that can be done without direct supervision and manual contact with the physical therapist were done. In one session, the patient incorrectly performed exercises while the physical therapist was supervising. The physical therapist provided feedback and correction regarding the proper execution of each movement and exercise. The safety of patients during the session can be compromised if not supervised and corrected (Cottrell et al., 2017).

### *Theme 4: Infrastructure*

The last theme was about the challenges in infrastructure. Telerehabilitation relay on a secured physical and digital infrastructure. Physical infrastructure involves a patient having a personal space in their house free from any distractions and can participate in the program. Further, a secure and private space is required to hold a digital physical therapy session. Based on session recordings, patients hold digital physical therapy sessions in their living room, where family members can hear and see the entire session. In one instance, the patient participated in the Telerehabilitation therapy session outside their house. Data breach and confidentiality issues can arise from this challenge (Leochico, 2020).

The local government unit provided a facility where patients could use the computer and space to participate in each digital, physical therapy session. However, patients are not using the facility because of accessibility problems and health security due to the pandemic. Based on the narrative of

one patient, “Malayo po kasi sa bahay naming ang Tech4Ed, kaya dito nalang po kami sa bahay”. Another patient stated that, “Nakakatakot po kasi kami mag commute papunta sa center dahil po sa COVID”. Digital infrastructure is a vital element in establishing Telerehabilitation. The digital infrastructure allows the connection from the patient to the physical therapist. However, this new technology can easily compromise patient data if not adequately handled. One problem is the cost of a secure and safe platform that can be used to implement Telerehabilitation. Moreso, since the technology is new in our country, there were no local platform developers. Because of this, the implementer relies on free audio-video software and social media platforms, which can be compromised.

### ***3. What lessons can be learned by implementing the telerehabilitation program?***

Lessons learned from the experiences of the implementors can be summed up into two themes: (a) the value of partnership and (b) bridging the healthcare access gap.

#### ***Theme 1: The value of partnership***

A partnership is vital in addressing the healthcare needs of the community. A strong partnership can foster a collaborative environment that will ensure the realization of a shared vision and goals. Project AdDPT is a product of Private Public Partnership (PPP) wherein the HEI provides the knowledge, skills, and workforce, while the partner local government unit provides the infrastructure and logistics of the program. In the Philippines, PPP is one strategy of the government to achieve Universal Health Care and encourage LGUs to forge partnerships with private institutions to address healthcare gaps (Banzon et al., 2013).

#### ***Theme 2: Bridging the gap***

The global health situation can directly affect our country's healthcare system. In addition, pandemics, natural calamities, and disasters can threaten Filipinos' health and change how we respond and deliver healthcare services. Currently, healthcare technology can bridge the healthcare access gap due to the inaccessibility of rehabilitation services because of the pandemic. However, Telerehabilitation is still an emergent trend that needs validation for its safety, effectiveness, and adherence to the ethical principle, and there is a need for proper evaluation through scientific research before using it on a much larger scale (Senbekov et al., 2020).

## **Conclusion**

Integrating technology in health in times of healthcare crisis, like the COVID-19 pandemic, is an excellent way to address the rehabilitation needs of Filipino people. Project ADdept is an innovative way to advance healthcare delivery by addressing the Philippines' limited access to rehabilitation



services. If adequately supported by the government, Telerehabilitation can help bridge healthcare accessibility in our country brought about by the pandemic and the limited geographic access to rehabilitation care for patients.

The integration of Telerehabilitation at the community level can be achieved by beginning the program at a low to medium technology videotelephony. Then, choose a pilot study municipality or city to implement, evaluate the implementation results, and let the Department of Health evaluate and analyze the cost benefits and efficiency of the technology before rolling it out to local or regional implementation. In conclusion, change is inevitable, and so is technology. Technological advancement flourished because of society's constant demand. In health and medicine, technology is our tool to achieve our dream– "Health for All."

### ***Declaration of Interest Statement***

The authors declare that they have no conflict of interests.

### **References**

- Banzon, Eduardo & Lucero, Josephine & Ho, Lorraine & Puyat, Maria & Quibod, June & Factor, Patricia Ann. (2013). Public-Private Partnership Options toward Achieving Universal Health Coverage in the Philippine Setting. *Journal of Philippine development: a technical journal of the National Economic and Development Authority*. 40. 161-186.
- Bashshur, R. L., Shannon, G. W., Smith, B. R., Alverson, D. C., Antoniotti, N., Barsan, W. G., Bashshur, N., Brown, E. M., Coye, M. J., Doarn, C. R., Ferguson, S., Grigsby, J., Krupinski, E. A., Kvedar, J. C., Linkous, J., Merrell, R. C., Nesbitt, T., Poropatich, R., Rheuban, K. S., Sanders, J. H., ... Yellowlees, P. (2014). and e-health : the official journal of the American Telemedicine Association, 20(9), 769–800. <https://doi.org/10.1089/tmj.2014.9981>
- Brigo, E., Rintala, A., Kossi, O., Verwaest, F., Vanhoof, O., Feys, P., & Bonnechère, B. (2022). Using Telehealth to Guarantee the Continuity of Rehabilitation during the COVID-19 Pandemic: A Systematic Review. *International journal of environmental research and public health*, 19(16), 10325. <https://doi.org/10.3390/ijerph191610325>
- Cucinotta, D., & Vanelli, M. (2020). WHO Declares COVID-19 a Pandemic. *Acta bio-medica : Atenei Parmensis*, 91(1), 157–160. <https://doi.org/10.23750/abm.v91i1.9397>

- Erica, C. N. (2013, January 10). Persons with Disability in the Philippines (Results from the 2010 Census). Philippine Statistics Authority. <https://psa.gov.ph/tags/persons-disability>
- Ftouni, R., AlJardali, B., Hamdanieh, M., Ftouni, L., & Salem, N. (2022). Challenges of Telemedicine during the COVID-19 pandemic: a systematic review. *BMC medical informatics and decision making*, 22(1), 207. <https://doi.org/10.1186/s12911-022-01952-0>
- FutureLearn. (2021, April 28). Lockdown extension in the Philippines: Impact on education. FutureLearn. Retrieved November 21, 2021, from <https://www.futurelearn.com/info/futurelearn-international/lockdown-extension-in-the-philippines>.
- Gudlavalleti, Murthy. (2018). Challenges in Accessing Health Care for People with Disability in the South Asian Context: A Review. *International Journal of Environmental Research and Public Health*. 15. 2366. [10.3390/ijerph15112366](https://doi.org/10.3390/ijerph15112366).
- Kim, S. Y., Daley, K., Pruski, A. D., AlFarra, T., Azola, A., Gonzalez Fernandez, M., Keszler, M. S., Friedel, S., Haaf, H., Segall, H., Lien, P., Cypher, J., Mazariegos, J., & Raghavan, P. (2022). Implementation of a Framework for Telerehabilitation in Clinical Care Across the Continuum During COVID-19 and Beyond. *American Journal of physical medicine & Rehabilitation*, 101(1), 53–60. <https://doi.org/10.1097/PHM.0000000000001904>
- Leochico, C. F. D., Espiritu, A. I., Ignacio, S. D., & Mojica, J. A. P. (2020). Challenges to the Emergence of Telerehabilitation in a Developing Country: A Systematic Review. *Frontiers in neurology*, 11, 1007. <https://doi.org/10.3389/fneur.2020.01007>
- Mapa, C. D. S. (2022, August 15). Proportion of Poor Filipinos was Recorded at 18.1 Percent in 2021. Philippine Statistics Authority. <https://psa.gov.ph/poverty-press-releases/nid/167972>
- Maravilla, Joemer & Catiwa, Jayson & Guariño, Rebecca & Yap, John & Pagatpatan, Jr, Celso & Orolfo, Diana Dalisay & De Silos, Jeriel & Leigh, Ma & Babate, Jerome & Lopez, Violeta. (2022). Exploring indirect impacts of COVID-19 on local health systems from the perspectives of health workers and higher education stakeholders in the Philippines using a phenomenological approach. *The Lancet Regional Health - Western Pacific*. 30. 100585. [10.1016/j.lanwpc.2022.100585](https://doi.org/10.1016/j.lanwpc.2022.100585).
- Marikyan, D. & Papagiannidis, S. (2023) Technology Acceptance Model: A review. In S. Papagiannidis (Ed), *TheoryHub Book*.

- Mechanic OJ, Persaud Y, Kimball AB. Telehealth Systems. 2022 Sep 12. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. PMID: 29083614.
- Pedron, B. J. N. (2019). Predictors Of And Barriers Associated With Health Services Utilization Among Persons With Disability. *Proceedings of the International Conference on Public Health*, 4(1), 1–10. <https://doi.org/10.17501/24246735.2018.4101>
- Philippines population (live). Worldometer. (n.d.). <https://www.worldometers.info/world-population/philippines-population/>
- Prvu Bettger J, Thoumi A, Marquevich V, et al COVID-19: maintaining essential rehabilitation services across the care continuum *BMJ Global Health* 2020;5:e002670.
- Prvu Bettger, J., & Resnik, L. J. (2020). Telerehabilitation in the Age of COVID-19: An Opportunity for Learning Health System Research. *Physical therapy*, 100(11), 1913–1916. <https://doi.org/10.1093/ptj/pzaa151>
- Rabanifar, Niloufar & Abdi, Kianoush. (2021). Barriers and Challenges of Implementing Telerehabilitation: A Systematic Review. *Iranian Rehabilitation Journal*. 19. 121-128. 10.32598/irj.19.2.1404.1.
- See, A. B. (2021, March 15). Inside one of the world's longest COVID-19 lockdowns. *Time*. Retrieved November 20, 2021, from <https://time.com/5945616/covid-philippines-pandemic-lockdown/>.
- Senbekov, Maksut & Saliev, Timur & Bukeyeva, Zhanar & Almabayeva, Aigul & Zhanaliyeva, Marina & Aitenova, Nazym & Toishibekov, Yerzhan & Fakhradiyev, Ildar. (2020). The Recent Progress and Applications of Digital Technologies in Healthcare: A Review. *International Journal of Telemedicine and Applications*. 2020. 1-18. 10.1155/2020/8830200.
- Seron, P., Oliveros, M. J., Gutierrez-Arias, R., Fuentes-Aspe, R., Torres-Castro, R. C., Merino-Osorio, C., Nahuelhual, P., Inostroza, J., Jalil, Y., Solano, R., Marzuca-Nassr, G. N., Aguilera-Eguía, R., Lavados-Romo, P., Soto-Rodríguez, F. J., Sabelle, C., Villarroel-Silva, G., Gomolán, P., Huaiquilaf, S., & Sanchez, P. (2021). Effectiveness of Telerehabilitation in Physical Therapy: A Rapid Overview. *Physical therapy*, 101(6), pzab053. <https://doi.org/10.1093/ptj/pzab053>
- Shinozaki, S., & Rao, L. N. (2021, April 23). Covid-19 impact on micro, small, and medium-sized enterprises under the lockdown: Evidence from a rapid survey in the Philippines. *Asian Development Bank*. Retrieved November 21, 2021, from

<https://www.adb.org/publications/covid-19-impact-msme-under-lockdown-evidence-rapid-survey-philippines>.

Stone, W., & Yu, E. (2020, May 6). Covid-19 fears may be causing people to ignore medical emergencies. NPR. Retrieved November 21, 2021, from <https://www.npr.org/2020/05/06/851173949/covid-19-fears-may-be-causing-people-to-ignore-medical-emergencies>.

Wa-Mbaleka, S. (2020). The Researcher as an Instrument. In: Costa, A., Reis, L., Moreira, A. (eds) Computer Supported Qualitative Research. WCQR 2019. Advances in Intelligent Systems and Computing, vol 1068. Springer, Cham. [https://doi.org/10.1007/978-3-030-31787-4\\_3](https://doi.org/10.1007/978-3-030-31787-4_3)

World Health Organization. (n.d.). Who coronavirus (COVID-19) dashboard. World Health Organization. <https://covid19.who.int/>

World Health Organization. (n.d.-a). Philippines: Who coronavirus disease (covid-19) dashboard with vaccination data. World Health Organization. <https://covid19.who.int/region/wpro/country/phs>. Social Psychiatry Epidemiology, 34, 136–140.