

Reaching out through Technology - A study on Post Discharge Care of COVID-19 Patients

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Introduction of Organization

- Camomile Healthcare started in the year 2016 with a single-minded mission to make healthcare efficient and process-driven. They created the tools, standards and processes that will help achieve their mission so that they can help hospitals to be value-driven and patient-centric.
- They have enabled a culture of innovation , that will continuously look for value unlocking opportunities and make them available to the healthcare sector.
- They intensely collaborative and they work closely in partnership with their clients. They are more like a key member of the team, and not just some outsourced agency.
- Camomile has worked with global majors in shaping the healthcare sector. Clients include Manipal Hospitals, Care Hospitals, Tata Trusts, Seven hill hospital and others.

Project

The App “Post Discharge Care of Covid-19 Patients” the values we offer through our app for post discharge patients that has been through COVID-19.

The Concept- With the aid of technology, we can reach out to discharged COVID-19 patients via our designed platform, and do so multiple times throughout their recovery period.

Care delivery-

- 1) Patient discharge summary, medication schedule, other instructions uploaded onto platform.
- 2) System is configured to track the patient 24 X 7 with monitoring by a clinical team.
- 3) Patient vitals are tracked 24x7. System has the ability to detect and trigger emergencies.
- 4) Medication adherence, physiotherapy, diet, mental health counselling is provided.
- 5) Protocol driven virtual consultations by doctors and nurses

The Technology -The (Smart wearable band) AI powered algorithm finds patterns to indicate health status of a patient. Our mobile app connected to the smart band via Bluetooth, continuously displays real time vitals data to the patient and transmits the data to cloud.

The cloud-based Care Dashboard gathers data from the patient's device and displays vitals and health status of all the patients.

Smart wearable band is context aware and intelligently measures the following vitals: Heart rate, SpO2 (blood oxygen saturation), Body temperature, Heart rate variability, Respiratory rate.

Packages - That consists of 2 packages that is Mild cases Moderate cases. the mild cases package consists of 7 days and the moderate consist of 14 days. The service that are provided in the packages are: consultation, monitoring services and patient engagement



(Smart wearable band)



(mobile app connected to the smart band via Bluetooth)

Dashboard – The patient data dashboard also provide a means of early identification of risk and health deterioration due to post COVID-19 complications. If anyone's vitals fall below normal , an emergency response is triggered

Patient Engagement – Patient engagement is an ideal healthcare situation in which people are well-informed about, and motivated to be involved in their own medical care.

In total 11 Patient engagement programme proposals I created for motivational activities that patient can do they are as follows: webinar, creative club, social media , yoga , comedy shows, skills , contest , quiz, music therapy, Content of any nature related to nutrition and health, speaking.

Bed Number	Patient Name	Last Synced At	Heart Rate	SpO2	Temp	Battery %	Health Status
Bed35	***	22nd Apr, 12:28 PM	50bpm	99.2%	99.6°F	85%	NO RISK
Bed27	***	22nd Apr, 10:04 AM	93bpm	99.1%	99.5°F	91%	NO RISK
Bed33	***	22nd Apr, 12:21 PM	87bpm	97.8%	98.9°F	89%	NO RISK

(Patient Data Dashboard)

Heart Rate	SpO2	Temp	Battery %	Health Status
63bpm	88.2%	99.5°F	93%	EMERGENCY
109bpm	88.6%	99.4°F	36%	EMERGENCY
75bpm	90.4%	99.4°F	76%	MODERATE RISK
130bpm	98.4%	99.8°F	94%	MODERATE RISK
110bpm	93.8%	99.6°F	90%	MILD RISK

Research Methodology

Study design : Action Research

Sample size: 60 Post discharge patients

Sampling technique: The patients that are going to be discharged or have been discharged from the hospital as our research objective is to assess the knowledge and gain some insights if the patient know about the post discharge care.

Mode of data collection: A structural questionnaire was used as a primary source of data collection.

Questionnaire includes total of 12 questions based on demographic information's, medical history, post discharge cares and patient engagement related questions. Google form was created and circulated among the patients that were going to be onboarding .

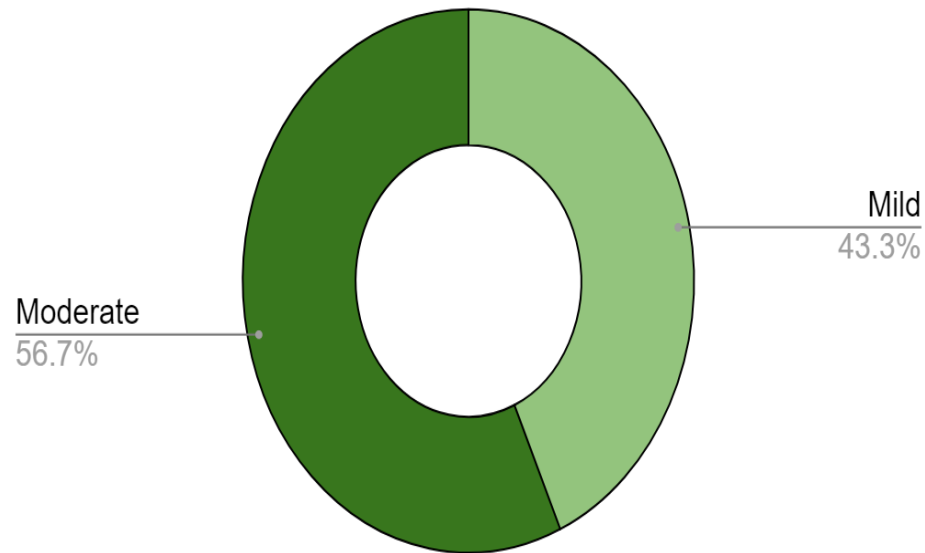
Data Analysis: The responses from the questionnaire are collected and analysed in excel. percentage analysis is done and pie charts are made.

Objective

- To receive feedback , understand perception and figure out room for improvement in our service plan.
- To convince individual to sign up for the service.
- To improve with time and provide better service .
- To start the service on small scale.

Findings and Descriptions

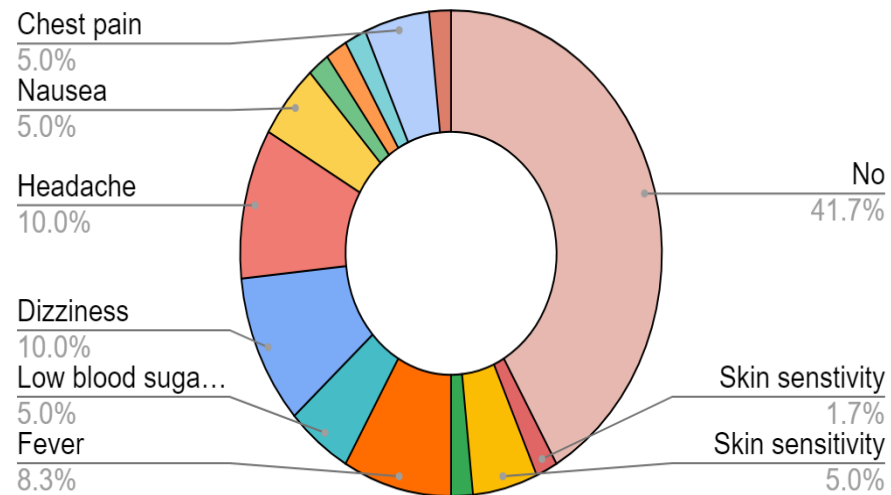
Per cent distribution of Severity of case



- From the data, the intent was to know about the patient severity during the covid-19 period they were admitted in the hospital because we offering to types of packages that were for mild 7 weeks and moderate for 14 weeks. Mild has 43.3% and moderate has slightly a greater number of patients that is 56.7%

Findings and Descriptions

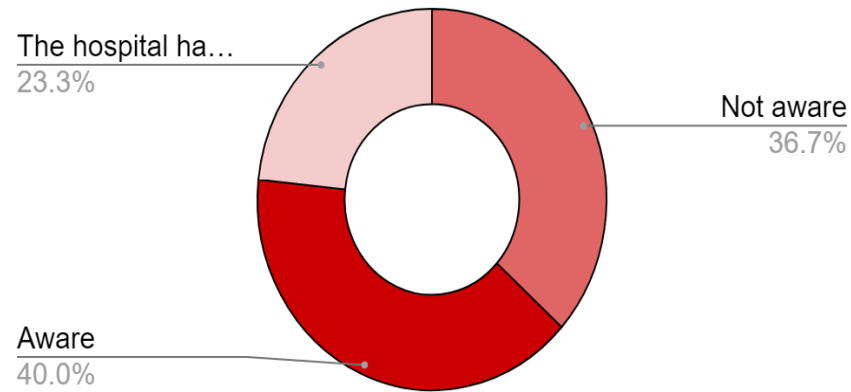
Per cent distribution of side effects due to medication taken during recovery



- From the data ,this was to know about the patient that were having symptoms so that we would be aware of what patient and their problem we would be handling. There were many symptoms that we found in the above data. 10% headaches, 10% dizziness, 8.3% fever, 5% of low blood sugar level, nausea, chest pain and skin sensitivity each, 1.7% of high blood sugar level, mouth ulcers and loss of memory each, and majority of the people showed no side effects during the recovery period the percentage level is 41.7

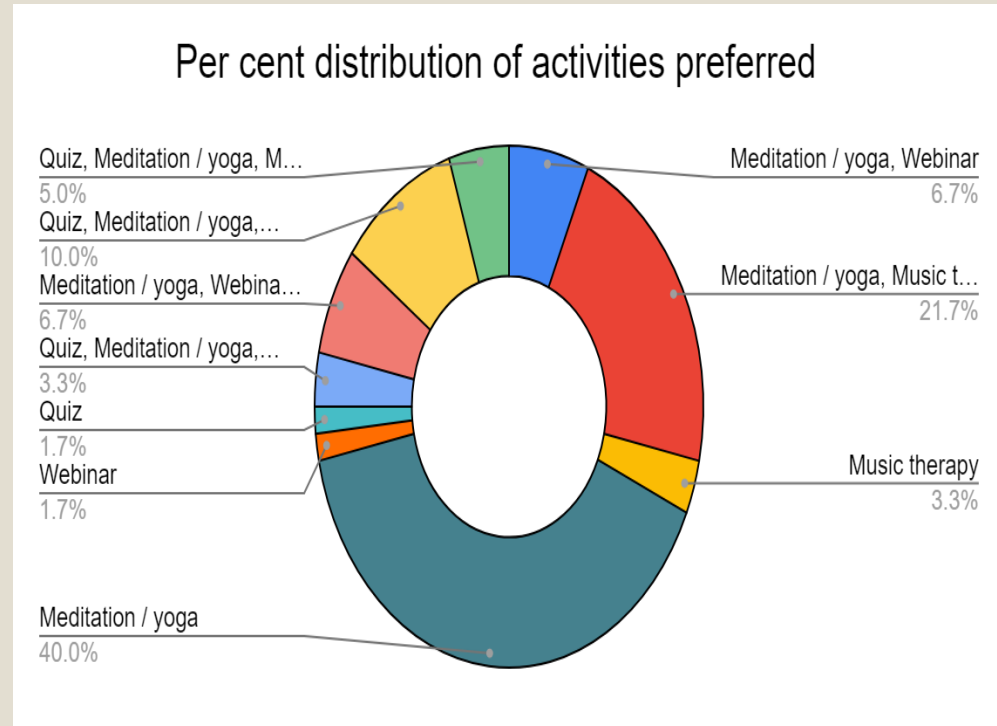
Findings and Descriptions

Per cent distribution of awareness of the post discharge care after been discharged



- From the data, the motive was to know how much the patients are aware of the post discharge care they have to take home and what all needs to be done. we got to know that 40% were aware, 36.7% were not aware and 23.3% of the people were not aware because the hospital did not give the instructions properly. Our motive from the app is also to give patient education regarding what to do and not during there post discharge period that can help them and as well as their family members

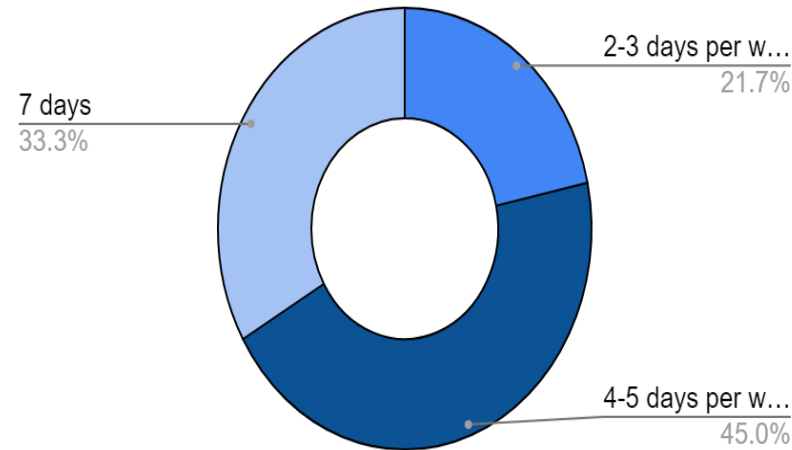
Findings and Descriptions



- From the data, the motive was to gain the information what the patients that are onboarding with us on the app are more into which activities. Quiz, Meditation / yoga, Webinar, Music therapy. The activities we have given and wanted to know from them what they prefer for us to have patient engagement with the people so that they can learn and enjoy at the same time. We got to know that 40% are more into yoga and meditation, 21.7% are meditation/yoga and music therapy, 10% Quiz, Meditation / yoga, Webinar, Music therapy, 6.7% Meditation / yoga, Webinar, Music therapy, 5% Quiz, Meditation / yoga, Music therapy, 3.3% Quiz, Meditation / yoga, Webinar, 1.7% webinar and quiz each.

Findings and Descriptions

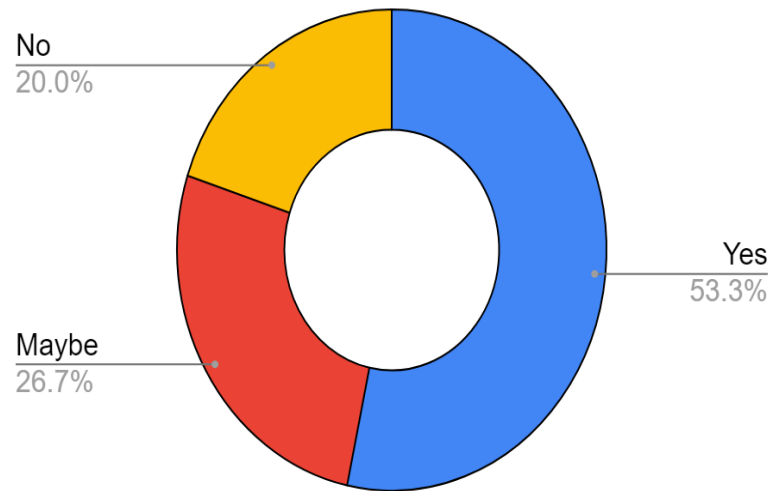
Per cent distribution of duration of period for the activity



- From the data, this was to know from the patient that were onboarding that how much days they want to have activities because we have two kinds of packages that we will offer the patient that is 7 week and next is 14 weeks. So, from the above data 21.7% of people prefer 2-3 days per week, 45% of people prefer 4-5 days per week and remaining 33.3% prefer whole week that is 7 days

Findings and Descriptions

Per cent distribution on willingness on collaboration with people for activities



- From the data, this was to help us know if people are comfortable to have interaction with other people and have more interaction and fun while doing their activities. As we can see 53.3% of people are willing to form and have group activities, 20% are not comfortable or might think they need alone time to do the activities and 26.7% are not sure if they want to do the activity with group or not

Patients view on Technological Interventions

- The Smart wearable band is simple, comfortable and do not have to use different things to measure there vitals and Smart wearable band is easy to use.
- They find it more easy to track there records at a single place.
- The nurses and doctors do not have to ask question about there vitals because it is easily assess to them and so they can give more time interacting with patients on there other needs.
- The Smart wearable band can very helpful while doing yoga, light exercise during the sessions . As it keep s the records of your vital and help to keep everything in check.

Action Taken

- We create a e- booklet on Post discharge care of patients and it was helpful for them to understand the process and what can be done.
- We implemented the session as per the packages the patient has taken and on the basis of there severity of the case.
- Mild case – 7 day package with 2 sessions and Moderate 14 day package with 7 sessions
- We created a video presenting the process on how the wearable band is used.
- We created groups online from same packages, for motivational actives that the patients can do while interacting with other. This activity is for half and hour.
- Nurses are on call with patients once in a day throughout there package and they asks question related to health and check if they have any discomfort based on there medical history.

Recommendation

- There should be more group wise patient engagement programme so that they can also communicate with each other and share the insights and the session will be livelier.
- The activity session should depend on the packages the patient is taking and considering their thoughts while they are onboarding.
- We can have 2 activities on a day to fulfill what the patient needs, the activity yoga and music therapy are mostly recommended by the patients so we can have half hour each for both activities.
- We can provide e- booklet on what the patient need to follow after been discharged and there care process , in this way the patients that are not aware of the post discharge care can also be aware of what they have to do. This e-booklet can be helpful for the patients family member also.
- The reinfection cases can be dealed with little more observation throughout the onboarding process the patient is with us.
- We can keep a session on the day patients onboard to show how the Smart wearable band functions or we can make a video ourself to show how it is used.

Conclusion

- Early detection of complications with predictive triggers using AI based pattern recognition tech, leading to reduction in unnecessary complications and a swift recovery.
- It will help reduce COVID-19 readmission rates and the health ecosystem currently short on supply can address patients requiring care.
- Patients and families can stop worrying about the hustle to procure additional services or equipment and focus on recovery.

Thank you

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