A Patient -Centric Approach For Effective Early Intervention In Post-Op Knee Patients

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ABSTRACT

The prevalence of knee pain and surgeries have increased substantially in the past 20yrs (Fox S, 2011), and we are seeing this trend in Malaysia. Medicine and Physiotherapy sessions may include electrotherapy modalities for pain reduction and accelerated healing. However, this may not be effective for patients with high levels of anxiety and low pain thresholds. A successful outcome must show significant improvement, and this requires EARLY Rehab post surgery, therefore pain control is crucial (Spalevic et al., 2014).

Evidence shows that collaboration with patients in their early care, and when patients are treated as partners , there is significant improvement in safety, patient satisfaction and health outcomes. By becoming active participants of the health care team, patients can contribute to the safety of their care and that of the health care system as a whole.

Our study introduced Hydrotherapy as an early intervention or precursor to land based Rehab as this reduces their anxiety, fear and pain. We analyzed retrospective data on patients' pain perception (VAS) and knee range of motion (ROM). A quantitative study was carried out from October 2021 to August 2022. We concluded that patients who were engaged in the early part of intervention showed notable improvements for both Knee ROM and pain perception as they were able to exercise in the pool, in a safe & conducive environment.

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INTRODUCTION

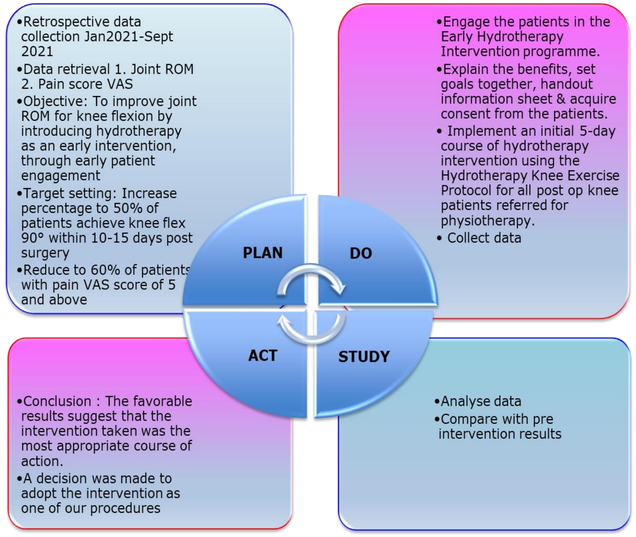
❑ The outcome of post knee surgeries referred for Physiotherapy in ADMC did not achieve the expected results, as only 15% of patients with post knee surgery (Day 10-15) achieved >90° in joint range of motion (ROM). The predominant complaint and obstacle was pain. 79% of patients reported a pain scale (VAS) of 5 and above.

❑ These patients did not undergo early intervention and were not involved in their own treatment programmes. This led to poor exercise compliance, increased pain and poor knee mobility.

❑ As a result of this, patients developed an abnormal gait with weak lower limb muscle strength and imbalance, exposing them to high risk of falls.

METHODS AND MATERIALS

❑ We used the Ishikawa Cause & Effect diagram to analyse and identify the possible and potential causes and then proceeded to utilize the PDSA method to break down the task into steps and then evaluating the outcome, improving on it, and testing again.



RESULTS

❑ Intervention began in October 2021 To August 2022.

❑ The results for the Run Charts below show a significant shift in improvement for both knee ROM and pain perception, post intervention.

❑ Results indicated that from the time of intervention, the number of patients achieving knee ROM >90° within 10-15 days post surgery was steadily increasing, surpassing the stipulated target of 50%

❑ The VAS (pain scale) or pain perception improved as well, with a decreasing % of patients recording VAS ≥5.

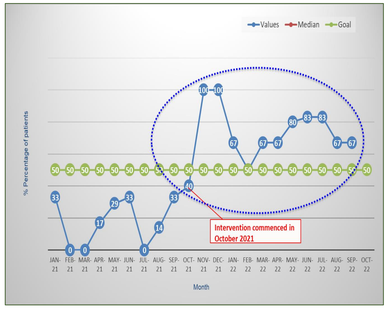
❑ The target to reduce pain perception to below 60% was met every month since the intervention was implemented.

	2021			2022		
MONTH	TOTAL NO OF PATIENTS POST KNEE SURGERY	ROM of the knee >90 within 10-15 days post surgery	% of ROM of the knee >90 within 10-15 days post surgery	TOTAL NO OF PATIENTS POST KNEE SURGERY	ROM of the knee >90 within 10-15 days post surgery	% of ROM of the knee >90 within 10-15 days post surgery
JANUARY	6	2	33	3	2	67
FEBRUARY	9	0	0	4	2	50
MARCH	3	0	0	3	2	67
APRIL	6	1	17	6	4	67
MAY	7	2	29	5	4	80
JUNE	6	2	33	6	5	83
JULY	6	0	0	6	5	83
AUGUST	7	1	14	3	2	67
SEPTEMBER	3	1	33			
OCTOBER	5	2	40			
NOVEMBER	3	3	100			
DECEMBER	5	5	100			
TOTAL	47	19		36	26	

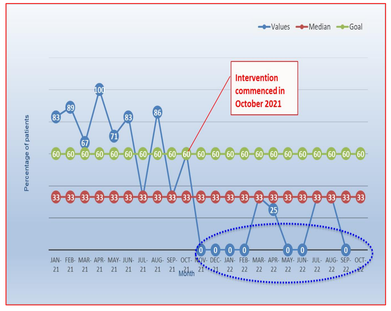
	2021			2022		
	VAS (Pain scale)		% of patients scoring VAS ≥5	VAS (Pain Scale)		% of patients scoring VAS ≥5
MONTH	1 2 3 4 5 6 7 8 9 10			1 2 3 4 5 6 7 8 9 10		
JANUARY	1 1 2 2		83	3		0
FEBRUARY	1 4 2 2		89	1 3		0
MARCH	1 1 1		67	2 1		33
APRIL	2 4		100	2 1 1		25
MAY	2 2 2 1		71	2 2		0
JUNE	1 2 2 1		83	1 3		0
JULY	2 2 1 1		33	2 2 2		33
AUGUST	1 1 4 1		86	2 1		33
SEPTEMBER	2 1		33			
OCTOBER	2 2 1		60			
NOVEMBER	3		0			
DECEMBER	1 3 1		0			
TOTAL PATIENTS	0 1 7 15 13 19 9 2 0 0			TOTAL PATIENTS	1 10 15 3 2	

GRAPHS AND TABLES

Objective #1 : To increase % of patients who achieved 90° of Knee flexion within 10-15 sessions post surgery (Target =50%)



Objective # 2 : To reduce % of patients who recorded a VAS of 5 and above (Target = BELOW 60%)



DISCUSSION

❑ The correlation between knee ROM and pain score is pronounced and notable, indicating that with the reduction of pain, there is a vast improvement in knee range of motion (ROM).

❑ It appears that when the patients were involved in their own recovery plan, the pain reduced significantly, permitting the patients to exercise safely.

❑ The increased compliance to exercises allowed the patients to achieve higher knee ROM, improved balance and strength, thus eliminating the incidence of injuries caused by falls or incorrect exercises.

CONCLUSION

❑ The favorable results suggest that the intervention taken was the most appropriate course of action, as patients' early involvement ensured the safety of the patients through the execution of correct exercises.

❑ It is crucial to engage patients at the very beginning of treatment, so that there is shared responsibility in the setting of treatment goals. This prevents harm caused by incorrect exercises and avoids the danger of falls caused by poor balance and mobility.

❑ Patients were also given educational information sheets so that they were well informed and knew what to expect. A consent form is required to further establish the patients' commitment to follow through with the programme.

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