The Impact of Medication Therapy Management Intervention on Patient-Reported Outcome (PRO) Measures in Patients with Myocardial Infarction (MI)

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BACKGROUND

Myocardial infarction significantly impacts patients' health and well-being worldwide. Each year, nearly 3 million people experience MI,[1] with a prevalence of 50.7 per 100,000 persons in Taiwan.[2] Effective post-MI management hinges on appropriate medication use and adherence. MTM interventions, designed to optimize medication therapy and improve patient outcomes, have shown promise in enhancing clinical outcomes, including better control of modifiable risk factors[3] and improved medication adherence.[4,5]

While these clinical benefits are significant, understanding patients' subjective experiences, as captured by patient-reported outcomes (PROs), is equally essential for providing comprehensive post-MI care in today's patient-centered healthcare environment. Despite the demonstrated effectiveness of MTM in improving clinical outcomes, the impact of MTM on the subjective experiences of MI patients remains unexplored.

The Seattle Angina Questionnaire (SAQ) is a validated tool for assessing clinical outcomes and quality of life in patients with coronary artery disease.[6] The SAQ comprises five domains: physical limitation, angina stability, angina frequency, treatment satisfaction, and quality of life. While the SAQ is valuable for capturing PROs, the specific effects of MTM interventions on these outcomes in MI patients remain unclear.

OBJECTIVE

This study aimed to investigate the effectiveness of MTM interventions in improving clinical and quality-of-life outcomes among patients with MI.

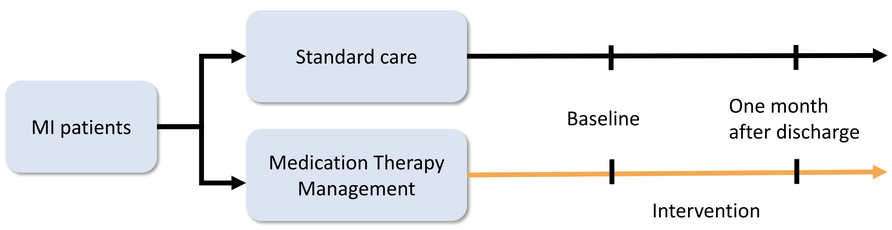
METHOD

Study Setting

- Department of Cardiology, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Kaohsiung, Taiwan
- It has a total of 1,718 beds, including both acute and intensive care beds, providing comprehensive clinical care to a wide range of patients. It is one of the most representative hospitals in southern Taiwan.
- In 2021, this hospital received Clinical Care Program Certification Acute Myocardial Infarction (CCPC-AMI) certified by JCI (Joint Commission International)

Study Design

- A two-group, comparative study design was employed



▲ Figure 1. Flowchart of the study design

- Group 1: Standard care
- Group 2: Medication Therapy Management (MTM)

Study Subjects

- Inclusion Criteria:
  1. Age ≥ 20 years
  2. Completion of cardiac catheterization intervention
  3. Diagnosed with acute myocardial infarction (ICD-10-CM code: I21)
  4. Agree with the service content of this team's care plan
- Exclusion Criteria:
  1. Occurrence of major events, such as loss of consciousness, lack of self-care ability, and no rehabilitation potential
  2. Have previously completed this team's care plan

Statistical Analysis

- Descriptive analysis
- Analysis of Covariance (ANCOVA) was used to compare changes in SAQ scores between the MTM and control groups, adjusting for baseline SAQ scores.

CONCLUSIONS

This study provides preliminary evidence for the potential benefits of MTM interventions in improving physical functioning, a key aspect of SAQ, in MI patients. Further research is warranted to confirm these findings, explore the impact on other SAQ domains, and investigate the long-term effects and cost-effectiveness of MTM in this patient population. Such knowledge can inform the development of comprehensive strategies for optimizing medication management and improving the quality of life for MI patients.

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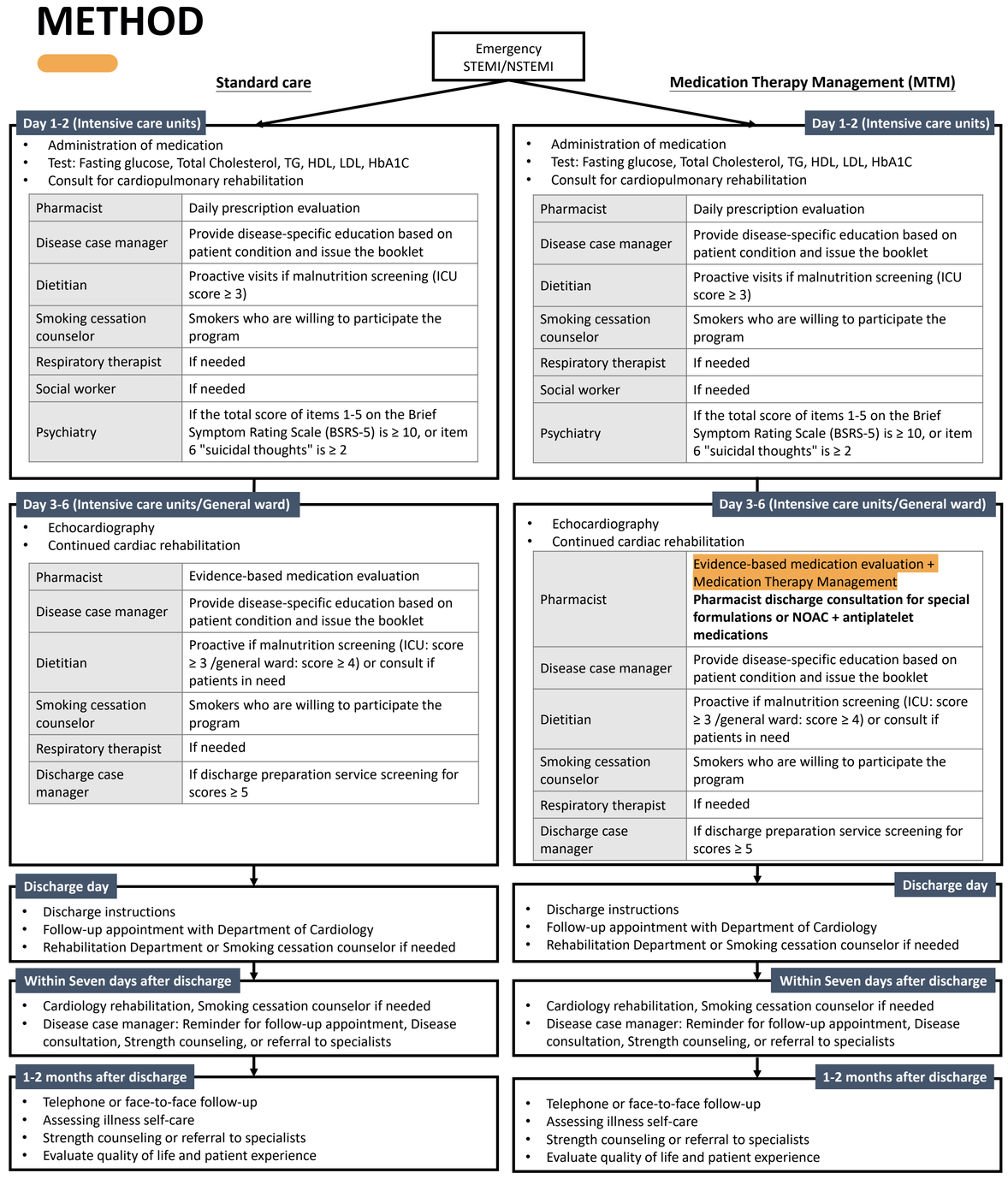
Conflicts of Interest: All authors certify that they have no any financial interest and conflict relevant to this project.

METHOD



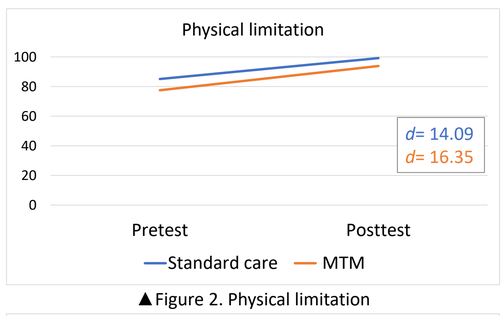
RESULTS

The descriptive analyses showed that patients in the MTM group demonstrated noticeable improvement in all SAQ domain scores compared to the control group after one month. However, the results from ANCOVA revealed that only one SAQ domain (Physical Function) had a statistically significant difference (p = 0.031) in the change between groups.

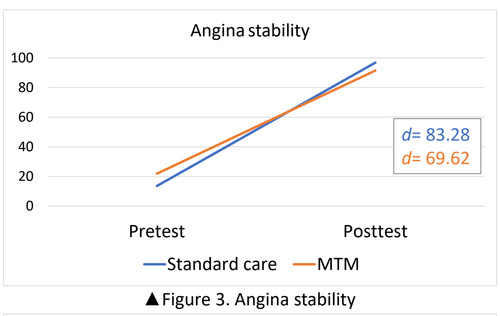
▼ Table 1. Results of the pre-and post-tests of the two groups in the 5 domains of the SAQ

Group	Standard care				Medication Therapy Management (MTM)				
	N	Pretest Mean (SE)	Posttest Mean (SE)	Difference	N	Pretest Mean (SE)	Posttest Mean (SE)	Difference	P value
SAQ									
Physical limitation	35	85.09 (2.3)	99.18 (1.0)	14.09	8	77.5 (5.5)	93.85 (2.1)	16.35	0.031*
Angina stability	34	13.57 (2.8)	96.85 (2.5)	83.28	8	21.88 (7.4)	91.50 (5.2)	69.62	0.363
Angina frequency	34	76.00 (2.2)	97.04 (1.4)	21.04	8	75.00 (4.6)	92.60 (3.0)	17.60	0.189
Treatment satisfaction	34	85.92 (1.5)	95.31 (1.7)	9.39	8	80.48 (4.9)	98.09 (3.5)	17.61	0.486
Quality of Life	34	51.19 (3.8)	77.95 (2.9)	26.76	8	39.59 (8.3)	86.39 (6.1)	46.80	0.224

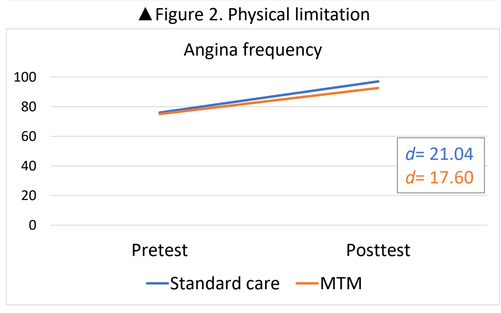
*: p<0.05



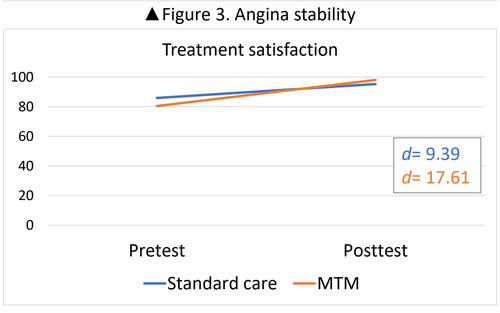
▲Figure 2. Physical limitation



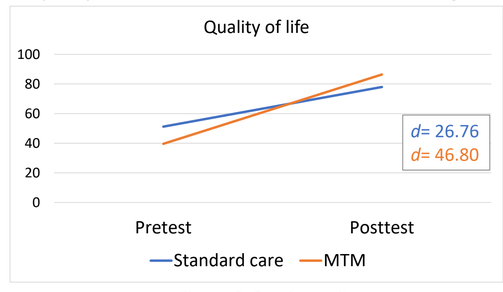
▲Figure 3. Angina stability



▲Figure 4. Angina frequency



▲Figure 5. Treatment satisfaction



▲Figure 6. Quality of life