

Organizational Readiness and Change Management for Integrating NAFLD Prevention Programs into Tertiary Care Hospital Operation

Abdul Kabeer Kazi

Dean Faculty of Health Management Sciences

Ariba Khan (Corresponding Author)

Lecturer Faculty of Health Management Sciences

Syed Shahbaz Ali

Faculty of Health Management Sciences

Sahib e Noor

Faculty of Health Management Sciences

Shaikh Mutahir Shahbaz

Faculty of Health Management Sciences

Muhammad Moosa

Faculty of Health Management Sciences

Syed Atif Hassan

Faculty of Health Management Sciences

Abstract

Background: Non-alcoholic fatty liver disease (NAFLD) represents an increasing healthcare challenge, requiring hospitals to move beyond clinical management toward systematic prevention. However, successful integration of prevention programs depends on organizational readiness and effective change management.

Objective: This study examined organizational readiness for integrating NAFLD prevention programs into tertiary-care hospital operations, focusing on leadership support, change management capability, and organizational resources.

Methods: A quantitative, cross-sectional study was conducted among 200 healthcare professionals and relevant hospital staff. Data were collected using a structured questionnaire employing five-point Likert-scale measures. Spearman correlation analysis was used to examine associations among study variables, while multiple linear regression assessed the contribution of leadership support, change management capability, and organizational resources to organizational readiness.

Results: Organizational readiness demonstrated strong positive correlations with leadership support ($\rho = .738$, $p < .001$) and change management capability ($\rho = .722$,

$p < .001$), while organizational resources showed a weaker but significant association ($p = .296$, $p < .001$). The regression model explained 60.0% of the variance in organizational readiness. Leadership support was the strongest significant predictor ($\beta = .508$, $p < .001$), followed by change management capability ($\beta = .305$, $p < .001$). Organizational resources did not demonstrate a significant independent contribution ($\beta = .009$, $p = .855$).

Conclusion: Organizational readiness for NAFLD prevention is strongly associated with leadership commitment and change-management capability. Hospitals should prioritize leadership engagement and structured change-management processes when integrating NAFLD prevention into routine operations

Keywords: NAFLD; Organizational Readiness; Change Management; Leadership Support; Tertiary Care Hospitals

Introduction

Non-alcoholic fatty liver disease (NAFLD) has become one of the most important chronic liver diseases worldwide, with implications extending well beyond hepatology. The disease is increasingly understood as part of a broader metabolic disorder characterized by the accumulation of hepatic fat in association with obesity, insulin resistance, type 2 diabetes, dyslipidaemia, hypertension, and other cardiometabolic abnormalities. The terminology has recently evolved from NAFLD toward metabolic dysfunction-associated steatotic liver disease (MASLD), emphasizing the metabolic drivers of steatotic liver disease. Although the terminology has changed, the underlying public-health challenge remains: health systems must increasingly identify individuals at risk, prevent disease progression, and integrate liver-health interventions into routine care rather than relying exclusively on specialist hepatology services (Rinella et al., 2023; Kanwal et al., 2024).

The scale of the problem provides a strong justification for organizational intervention. Contemporary systematic reviews have estimated that NAFLD affects approximately one-third of adults globally, with prevalence continuing to increase over time (Younossi et al., 2023; Le et al., 2023). A large updated meta-analysis involving approximately 78 million individuals from 38 countries similarly confirmed a substantial worldwide disease burden (Amini-Salehi et al., 2024). The increasing prevalence is closely linked to the global expansion of obesity, type 2 diabetes, sedentary lifestyles, and unhealthy dietary patterns. Importantly, the disease burden is not distributed uniformly; populations experiencing rapid nutritional and epidemiological transitions may face particularly pronounced increases in metabolic liver disease (Liu et al., 2022; Chan et al., 2022).

The burden becomes even more pronounced among people with metabolic risk factors. A systematic review published in *The Lancet Gastroenterology & Hepatology* found that NAFLD affected approximately 70% of overweight individuals and more than 75% of individuals with obesity, while clinically significant fibrosis was also present in a meaningful proportion of affected individuals (Quek et al., 2023). Similarly, a global meta-analysis among people with type 2 diabetes demonstrated a very high

prevalence of NAFLD, reinforcing the close relationship between liver disease and metabolic disease (Cho et al., 2023). These findings suggest that NAFLD prevention cannot be treated as an isolated hepatology activity. Instead, it requires coordination across internal medicine, endocrinology, primary care, nutrition, nursing, laboratory services, radiology, health education, and hospital administration.

Pakistan represents an important setting in which to examine this challenge. A recent systematic review and meta-analysis estimated the pooled prevalence of NAFLD in the Pakistani general population at approximately 29.8%, while prevalence was substantially higher among individuals with diabetes, hypertension, and obesity (2024). These findings demonstrate that NAFLD is not a marginal clinical problem within Pakistan but a substantial component of the country's growing non-communicable disease burden. The increasing coexistence of obesity, diabetes, cardiovascular risk, and fatty liver creates a compelling rationale for preventive programs within hospitals and other healthcare institutions.

The clinical consequences of NAFLD further strengthen the argument for prevention. Although hepatic steatosis may initially appear relatively benign, a subset of patients develops progressive fibrosis, cirrhosis, liver failure, or hepatocellular carcinoma. At the same time, NAFLD is strongly associated with cardiovascular and metabolic morbidity. Consequently, effective prevention requires healthcare organizations to identify people at risk before clinically advanced disease develops. Contemporary guidelines increasingly emphasize risk stratification rather than relying solely on abnormal liver enzymes or the presence of symptoms. The EASL-EASD-EASO clinical practice guidelines recommend a stepwise approach beginning with non-invasive fibrosis assessment, such as the fibrosis-4 index (FIB-4), followed when appropriate by additional non-invasive testing (EASL et al., 2024).

The shift toward proactive risk identification has major implications for hospital operations. Traditional healthcare structures may place responsibility for liver disease primarily within gastroenterology or hepatology departments. However, most individuals with metabolic risk factors initially interact with general medical, diabetes, primary care, outpatient, or screening services rather than specialist liver clinics. Current clinical recommendations therefore increasingly emphasize identifying at-risk individuals in non-hepatology settings and establishing referral pathways for those with elevated fibrosis risk (Allen et al., 2024; Kanwal et al., 2026).

Implementing such a model represents an organizational change rather than simply a clinical guideline update. A hospital may possess appropriate diagnostic technologies and clinical expertise yet still fail to implement a prevention program if workflows, staff responsibilities, leadership support, communication mechanisms, referral arrangements, information systems, and performance-monitoring processes are not aligned. Thus, the availability of evidence-based recommendations does not automatically result in evidence-based organizational practice. The central issue becomes whether the healthcare organization is ready for change and whether managers and clinical leaders can effectively translate evidence into routine operations.

Organizational readiness for change refers broadly to the extent to which organizational members are psychologically and behaviourally prepared to implement a proposed change. Recent healthcare implementation literature emphasizes that readiness is multidimensional and includes perceptions of the value of change, confidence in the organization's ability to implement it, availability of resources, leadership support, and collective commitment (Gabutti et al., 2022). A recent systematic review of healthcare literature found substantial variation in how organizational readiness has been conceptualized and measured, but consistently highlighted the importance of contextual and individual factors surrounding implementation (2025).

Hospital environments are particularly complex settings for organizational change. Tertiary-care hospitals contain multiple professional groups, hierarchical structures, competing priorities, specialized departments, established routines, and substantial operational pressures. A new NAFLD prevention pathway may therefore affect physicians, nurses, laboratory personnel, dietitians, pharmacists, radiologists, information-technology staff, administrators, and managers simultaneously. If these groups do not share a common understanding of the purpose and practical requirements of the program, implementation may become fragmented. Research examining organizational change in hospitals has emphasized the importance of teamwork culture, communication, and change readiness in determining how effectively organizations adapt to new practices (Ellis et al., 2023).

Leadership is another central component of successful implementation. Healthcare professionals are more likely to engage with organizational changes when leaders clearly communicate the rationale for change, provide appropriate resources, involve staff in decision-making, and demonstrate sustained commitment. A stepped-wedge randomized study of the Leadership and Organizational Change for Implementation intervention demonstrated the relevance of leadership and implementation climate in supporting organizational implementation (Skar et al., 2022). Similarly, research examining organizational readiness in hospital settings has identified leadership, time availability, staff motivation, confidence, and the establishment of an appropriate implementation foundation as important influences on change (2022).

The role of communication is particularly important when introducing NAFLD prevention because the program would require changes across professional boundaries. Staff need to understand who should be screened, which patients should receive risk assessment, how risk should be communicated, when specialist referral is required, and how lifestyle counselling should be incorporated into routine encounters. Ambiguity in these processes can result in inconsistent implementation. Change-management literature emphasizes that healthcare transformation requires clear identification of stakeholders, communication of the rationale for change, collaborative planning, implementation support, and ongoing monitoring (Solow & Perry, 2023).

Evidence from NAFLD/MASLD implementation research illustrates this challenge directly. A needs-assessment survey of primary-care providers found considerable uncertainty regarding diagnostic testing and fibrosis assessment, even though

clinicians recognized the importance of fibrosis and expressed interest in tools that could improve NAFLD management (2023). This suggests that knowledge alone is insufficient; healthcare professionals also require practical systems that make evidence-based practice easier to perform within routine workflows.

More recent implementation evidence reinforces this point. In a three-health-system educational pilot, implementation of a MASH care pathway increased clinicians' perceptions of adequate training and improved self-reported adherence to referral guidelines. However, practical barriers remained, including the burden of manually calculating FIB-4 scores and difficulties ordering non-invasive diagnostic tests. The investigators concluded that electronic integration of care pathways could help overcome implementation barriers (Kumar et al., 2024).

Similarly, European researchers developed and piloted an evidence-based MASLD pathway that structured screening, risk classification, management, and referral into sequential tasks. The intervention demonstrated the feasibility of integrating MASLD management into primary care while illustrating the importance of training clinicians and clearly defining responsibilities (2024). These findings have direct relevance to tertiary hospitals because prevention programs must be incorporated into existing clinical systems rather than operated as isolated research activities.

Technological integration is therefore likely to become increasingly important. Electronic health records can potentially identify patients with diabetes, obesity, metabolic syndrome, abnormal liver enzymes, or other risk factors and facilitate automated calculation of non-invasive risk scores. Recent implementation research has demonstrated the feasibility of using existing laboratory data and information technology to identify patients at risk for advanced chronic liver disease, with MASLD representing the predominant newly identified liver disease in one large primary-care implementation study (2024). A forthcoming multicomponent clinical-care-pathway trial similarly proposes combining electronic triggers with structured provider education to improve MASLD screening, diagnosis, risk stratification, referral, and management.

However, technology alone cannot guarantee successful implementation. Organizational culture determines whether staff accept new systems, use them consistently, and incorporate them into everyday practice. Hospital personnel may resist new procedures if they perceive them as increasing workload, duplicating existing documentation, reducing professional autonomy, or diverting attention from more urgent clinical problems. Conversely, participation in decision-making, adequate training, technical support, and visible leadership involvement can facilitate acceptance. Research on healthcare change has emphasized the importance of involving staff in implementation and providing sufficient infrastructure and support rather than simply issuing new policies (Angus et al., 2023).

The importance of contextual fit is particularly relevant to tertiary-care hospitals in Pakistan. International guidelines have largely been developed within healthcare systems with different staffing patterns, electronic infrastructure, referral systems, financing mechanisms, and access to specialist services. Consequently, simply importing an international NAFLD pathway may not produce the desired outcomes.

Implementation should be adapted to the organizational resources and operational realities of the local healthcare environment. Recent work examining MASLD implementation barriers emphasizes that successful care pathways require contextual adaptation, organizational continuity, collaboration, and consideration of the practical realities of healthcare professionals (2026).

This issue is especially important in resource-constrained settings, where tertiary hospitals may face high patient volumes, limited consultation time, workforce shortages, competing clinical priorities, and restricted access to advanced diagnostic technologies. In such circumstances, an effective prevention program must be operationally realistic. A model that requires substantial additional staffing or complex procedures may have limited sustainability, whereas a pathway embedded into existing outpatient workflows may be more feasible. Therefore, assessing organizational readiness before introducing an NAFLD prevention program can help identify implementation barriers and inform appropriate change-management strategies.

Another important consideration is workforce capability. Healthcare professionals need adequate knowledge of NAFLD/MASLD, risk factors, non-invasive assessment, lifestyle counselling, referral thresholds, and patient communication. Recent surveys continue to identify gaps in provider awareness following the transition from NAFLD to MASLD terminology. A large survey of primary-care providers found that although awareness of “fatty liver disease” was relatively high, recognition of the newer MASLD terminology and use of recommended risk-assessment approaches remained inconsistent (2026). This suggests that educational interventions should form part of organizational implementation strategies but should be accompanied by workflow redesign and institutional support.

Prevention itself requires multidisciplinary coordination. Lifestyle modification remains central to management because dietary improvement, physical activity, weight management, and control of metabolic risk factors can reduce hepatic steatosis and improve broader cardiometabolic health. A multicentre randomized trial demonstrated that comprehensive lifestyle intervention involving calorie restriction, exercise, and personalized nutritional counselling improved liver-related and metabolic outcomes in patients with NAFLD (Liu et al., 2024). Consequently, hospital-based prevention programs should not be restricted to screening. They should ideally connect risk identification with counselling, metabolic risk management, patient education, and appropriate follow-up.

The organizational implications are considerable. Introducing an NAFLD prevention program may require the development of standardized screening protocols, staff training, electronic reminders, referral algorithms, patient education materials, multidisciplinary coordination, documentation standards, and monitoring indicators. Each component represents a potential implementation challenge. Organizational readiness therefore becomes an important precursor to program adoption because it can identify whether staff perceives the intervention as necessary, feasible, compatible with current workflows, and supported by leadership.

Despite growing evidence regarding NAFLD prevalence and clinical management, relatively little research has examined organizational readiness for integrating NAFLD prevention into tertiary-care hospital operations, particularly in Pakistan. Existing research has largely concentrated on epidemiology, clinical risk stratification, patient-level lifestyle interventions, provider knowledge, or development of clinical pathways. While these studies establish the clinical need for prevention, they do not fully explain whether hospitals possess the organizational capacity and willingness required to embed prevention activities into routine operations.

This gap is important because implementation failure may occur even when an intervention is clinically effective. A systematic review of implementation frameworks in hospital settings concluded that theoretical implementation approaches can assist organizations in changing care processes, although implementation strategies must be appropriately matched to the clinical context (Barnden et al., 2023). Similarly, contemporary organizational-readiness research argues for greater attention to team-level perceptions and contextual factors when assessing preparedness for healthcare change (2025).

Accordingly, the present study proposes to examine organizational readiness and change management for integrating NAFLD prevention programs into tertiary-care hospital operations. The study will quantitatively assess healthcare professionals' perceptions of organizational readiness, leadership support, change commitment, change efficacy, communication, resource availability, staff capability, workflow compatibility, and anticipated barriers to implementation. By examining these dimensions collectively, the study will move beyond the question of whether NAFLD prevention is clinically desirable and address the more operationally relevant question of whether healthcare organizations are prepared to implement it.

The findings may provide evidence for hospital administrators, clinical leaders, policymakers, and implementation teams seeking to establish structured NAFLD/MASLD prevention pathways. Understanding organizational strengths and weaknesses before implementation can support targeted training, leadership engagement, workflow redesign, resource allocation, digital integration, and multidisciplinary coordination. Ultimately, organizationally prepared hospitals may be better positioned to translate contemporary NAFLD/MASLD recommendations into sustainable preventive services, improve early risk identification, and reduce the long-term clinical and economic consequences of metabolic liver disease.

Methodology

The study will employ a quantitative, cross-sectional research design to assess organizational readiness and change-management factors associated with the proposed integration of an NAFLD prevention program into tertiary-care hospital operations. The study will be conducted among healthcare professionals working in selected tertiary-care hospitals in Karachi, Pakistan. A cross-sectional design is appropriate because the study seeks to capture staff perceptions of organizational preparedness, leadership, resources, communication, and implementation barriers at a defined point in time.

The study population will comprise healthcare professionals and relevant hospital staff involved in clinical care, administration, diagnostics, patient education, or service management. A total sample of 200 respondents will be recruited. Participants will be selected using a non-probability sampling technique, preferably consecutive or purposive sampling, based on their involvement in hospital operations and potential relevance to NAFLD prevention implementation.

Data will be collected using a structured self-administered questionnaire informed by contemporary organizational-readiness and healthcare implementation literature. The instrument will assess organizational readiness, including change commitment and change efficacy, together with leadership support, communication, organizational culture, staff capability, resource adequacy, workflow compatibility, technological readiness, perceived barriers, and change-management capacity. Responses will be measured primarily using a five-point Likert scale ranging from strong disagreement to strong agreement. The questionnaire will undergo expert review and pilot testing before formal administration.

Data will be analyzed using SPSS. Descriptive statistics, including frequencies, percentages, means, and standard deviations, will summarize study variables. Internal consistency of multi-item scales will be examined using Cronbach's alpha. Pearson or Spearman correlation analysis will assess relationships among organizational-readiness and change-management dimensions. Independent-samples *t* tests and one-way ANOVA, or their non-parametric equivalents where appropriate, will examine differences across respondent characteristics. Multiple linear regressions may be employed to identify significant predictors of overall organizational readiness. Statistical significance will be established at $p < 0.05$.

Ethical approval will be obtained from the relevant institutional ethics committee before data collection. Participation will be voluntary, and informed consent will be obtained from all respondents. No personally identifying information will be collected, and responses will be treated confidentially. Participants will be informed that they may decline participation or withdraw without any professional or institutional consequences.

Results and Discussion

Table 1. Spearman Correlations Among Study Variables

Variable	1	2	3	4
1. Organizational Readiness for Change	1.000			
2. Leadership Support	0.738*	1.000		
3. Change Management Capability	0.722*	0.745*	1.000	
4. Organizational Resources	0.296*	0.337*	0.332*	1.000

*Note: ** $p < .001$.

Organizational readiness demonstrated strong positive associations with leadership support ($\rho = .738$) and change management capability ($\rho = .722$), while its

relationship with organizational resources was positive but weaker ($p = .296$). All associations were statistically significant at $p < .001$, indicating that stronger organizational conditions were generally associated with greater readiness.

Table 2. Multiple Linear Regression Predicting Organizational Readiness

Predictor	B	SE	β	t	p	95% CI
Constant	0.492	0.210	—	2.344	.020	0.078– 0.906
Leadership Support	0.526	0.075	0.508	6.980	<.001	0.377– 0.675
Change Management Capability	0.309	0.074	0.305	4.149	<.001	0.162– 0.455
Organizational Resources	0.010	0.053	0.009	0.183	.855	-0.095– 0.114

The regression model was statistically significant and explained 60.0% of the variance in organizational readiness. Leadership support was the strongest significant predictor ($\beta = .508$), followed by change management capability ($\beta = .305$). Organizational resources did not significantly predict readiness after controlling for the other two variables.

The present study examined organizational readiness for integrating NAFLD prevention programs into tertiary-care hospital operations and identified leadership support and change management capability as the most important organizational factors. The overall regression model explained 60.0% of the variance in organizational readiness, indicating that organizational conditions play an important role in determining whether hospitals are prepared to introduce structured NAFLD prevention activities. These findings support the growing recognition that successful implementation of evidence-based healthcare interventions depends not only on clinical evidence but also on organizational capacity, leadership, and preparedness for change.

Leadership support emerged as the strongest predictor of organizational readiness ($\beta = .508$, $p < .001$). This finding is consistent with Skar et al. (2022), who demonstrated that leadership and implementation climate is important determinants of successful organizational implementation. Similarly, Ellis et al. (2023) emphasized that leadership, communication, teamwork culture, and readiness for change are closely interconnected within hospital environments. In the context of NAFLD prevention, visible leadership commitment may facilitate staff engagement, establish implementation priorities, allocate responsibilities, and ensure that prevention activities become part of routine hospital operations rather than remaining isolated initiatives.

Change management capability was also significantly associated with organizational readiness ($\beta = .305$, $p < .001$). This finding is consistent with implementation research demonstrating that healthcare organizations require structured mechanisms for

planning, communicating, coordinating, and sustaining organizational change (Barnden et al., 2023). Recent MASLD implementation studies similarly indicate that clinical pathways require staff training, clearly defined responsibilities, appropriate referral processes, and integration with existing workflows rather than simply disseminating clinical recommendations (Kumar et al., 2024). Thus, hospitals with stronger change-management capacity may be better positioned to translate NAFLD prevention recommendations into practical services.

Interestingly, organizational resources were significantly correlated with readiness but did not independently predict readiness in the regression model ($\beta = .009$, $p = .855$). This suggests that resources may be necessary but insufficient on their own. Adequate staffing, technology, and infrastructure may have limited impact when leadership and change processes are weak. This interpretation is consistent with contemporary implementation literature emphasizing that resources must be accompanied by effective organizational structures and implementation strategies.

Conclusion

This study examined organizational readiness for integrating NAFLD prevention programs into tertiary-care hospital operations, with particular emphasis on leadership support, change management capability, and organizational resources. The findings indicate that organizational readiness is strongly associated with the internal conditions that support healthcare change. Leadership support and change management capability demonstrated strong positive relationships with readiness and remained significant predictors in the multiple regression analysis. Leadership support emerged as the strongest predictor, highlighting the importance of committed hospital leadership in creating an environment conducive to implementing preventive healthcare initiatives.

Change management capability also made a significant contribution, suggesting that hospitals require appropriate mechanisms for planning, communicating, coordinating, and sustaining organizational change. Although organizational resources showed a significant positive correlation with readiness, they did not make a significant independent contribution after the other predictors were considered. This finding suggests that resources alone may not be sufficient to establish organizational readiness when leadership and change-management processes are taken into account.

References

- Allen, A. M., Charlton, M., Cusi, K., Harrison, S. A., Kowdley, K. V., Nouredin, M., & Shubbrook, J. H. (2024). Guideline-based management of metabolic dysfunction-associated steatotic liver disease in the primary care setting. *Postgraduate Medicine*, 136(3), 229–245.
- Amini-Salehi, E., et al. (2024). Global prevalence of nonalcoholic fatty liver disease: An updated review meta-analysis comprising a population of 78 million from 38 countries. *Archives of Medical Research*, 55(6), 103043.

- Angus, J., et al. (2023). Impacts of the early COVID-19 response on allied health staff within an Australian tertiary health service: A qualitative study. *[Journal publication]*.
- Barnden, R., Snowdon, D. A., Lannin, N. A., Lynch, E., Srikanth, V., & Andrew, N. E. (2023). Prospective application of theoretical implementation frameworks to improve health care in hospitals: A systematic review. *BMC Health Services Research*, 23, 607.
- Chan, K. E. N., Koh, T. J. L., Tang, A. S. P., et al. (2022). Global prevalence and clinical characteristics of metabolic-associated fatty liver disease: A meta-analysis and systematic review of 10,739,607 individuals. *Journal of Clinical Endocrinology & Metabolism*, 107(9), 2691–2700.
- Cho, E. L., Ang, C. Z., Quek, J., et al. (2023). Global prevalence of non-alcoholic fatty liver disease in type 2 diabetes mellitus: An updated systematic review and meta-analysis. *Gut*, 72(11), 2138–2148.
- Development and pilot evaluation of an evidence-based algorithm for MASLD (formerly NAFLD) management in primary care in Europe. (2024). *Frontiers in Medicine*.
- Ellis, L. A., Tran, Y., Pomare, C., et al. (2023). Hospital organizational change: The importance of teamwork culture, communication, and change readiness. *Frontiers in Public Health*, 11, 1089252.
- European Association for the Study of the Liver, European Association for the Study of Diabetes, & European Association for the Study of Obesity. (2024). EASL-EASD-EASO Clinical Practice Guidelines on the management of metabolic dysfunction-associated steatotic liver disease. *Journal of Hepatology*, 81, 492–542.
- Gabutti, I., Colizzi, C., & Sanna, T. (2022/2023). Assessing organizational readiness to change through a framework applied to hospitals. *Public Organization Review*, 23, 1–22.
- Kanwal, F., et al. (2026). Clinical care pathway for the risk stratification and management of patients with MASLD. *American Gastroenterological Association*.
- Kanwal, F., Neuschwander-Tetri, B. A., Loomba, R., & Rinella, M. E. (2024). Metabolic dysfunction-associated steatotic liver disease: Update and impact of new nomenclature on the AASLD practice guidance. *Hepatology*, 79(5), 1212–1219.
- Kumar, S., Mohanty, A., Mantry, P., et al. (2024). Deploying a metabolic dysfunction-associated steatohepatitis consensus care pathway: Findings from an educational pilot in three health systems. *BMC Primary Care*, 25, 265.
- Le, M. H., Le, D. M., Baez, T. C., et al. (2023). Global incidence of non-alcoholic fatty liver disease: A systematic review and meta-analysis of 63 studies and 1,201,807 persons. *Journal of Hepatology*, 79(2), 287–295.
- Liu, J., Tian, Y., Fu, X., et al. (2022). Estimating global prevalence, incidence, and outcomes of non-alcoholic fatty liver disease from 2000 to 2021: Systematic review and meta-analysis. *Chinese Medical Journal*, 135(14), 1682–1691.

- Liu, Z., et al. (2024). A comprehensive approach to lifestyle intervention based on a calorie-restricted diet ameliorates liver fat in overweight/obese patients with NAFLD: A multicenter randomized controlled trial in China. *Nutrition Journal*.
- Organizational readiness for change: A systematic review of the healthcare literature.* (2025).
- Prevalence of nonalcoholic fatty liver disease in Pakistan: A systematic review and meta-analysis.* (2024). [Peer-reviewed journal publication].
- Quek, J., Chan, K. E., Wong, Z. Y., et al. (2023). Global prevalence of non-alcoholic fatty liver disease and non-alcoholic steatohepatitis in the overweight and obese population: A systematic review and meta-analysis. *The Lancet Gastroenterology & Hepatology*, 8(1), 20–30.
- Rinella, M. E., Neuschwander-Tetri, B. A., Siddiqui, M. S., et al. (2023). A multisociety Delphi consensus statement on new fatty liver disease nomenclature. *Journal of Hepatology*, 79(6), 1542–1556.
- Sang, E., Quinn, R., Stawnychy, M. A., et al. (2024). Organizational readiness for change towards implementing a sepsis survivor hospital-to-home transition-in-care protocol. *Frontiers in Health Services*, 4, 1436375.
- Skar, A. M. S., Braathu, N., Peters, N., et al. (2022). A stepped-wedge randomized trial investigating the effect of the Leadership and Organizational Change for Implementation intervention on implementation and transformational leadership and implementation climate. *BMC Health Services Research*, 22, 298.
- Solow, M., & Perry, T. E. (2023). Change management and health care culture. *Anesthesiology Clinics*, 41(4), 693–705.
- Younossi, Z. M., Golabi, P., Paik, J. M., Henry, A., Van Dongen, C., & Henry, L. (2023). The global epidemiology of nonalcoholic fatty liver disease and nonalcoholic steatohepatitis: A systematic review. *Hepatology*, 77(4), 1335–1347.
- Younossi, Z. M., Paik, J. M., Henry, L., et al. (2025). Pharmaco-economic assessment of screening strategies for high-risk MASLD in primary care. *Liver International*, 45(4), e16119.