



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Programme: Msc In Public Health and Social Care In Practice

Student Name: Pinalkumari Dhansukhbhai Patel

Student Numbers: 2529442

Module: Poppulation Health and Digital Health Promotion

Module Code: LCHS7009

Lecturer: Dr Ping Wu

Assignment Title: component 1 (2 blogs)

Table of Contents

Blog 1: A Critical Evaluation of CirrhoCare in Transforming the Prevention and Self-Management of Liver Cirrhosis	3
Introduction	3
Public Health Problem.....	3
Overview of CirrhoCare	4
Effectiveness of CirrhoCare	4
Critical Evaluation.....	5
Recommendations	5
Conclusion	5
References.....	6
Blog 2: Designing LiverCare AI: An Intelligent Digital Health Platform for Self-Management and Prevention of Liver Cirrhosis.....	8
Introduction	8
Public Health Problem.....	8
Designed Technology: LiverCare AI.....	9
Health Promotion Interventions	9
Advantages and Disadvantages.....	9
Recommendations	10
Conclusion	10
References.....	11

Blog 1: A Critical Evaluation of CirrhoCare in Transforming the Prevention and Self-Management of Liver Cirrhosis

INTRODUCTION

Liver Cirrhosis is considered as a major public health problem as it increases the mortality rate and creates a healthcare burden in the UK (NHS Inform, 2026). It scars the human liver through continuous and long-term damage and causes liver failure. Every year, nearly 4,000 people die from liver cirrhosis and 700 Britons require a liver transplant to survive (NHS Inform, 2026).

PUBLIC HEALTH PROBLEM

In the UK, liver cirrhosis is gradually increasing due to high alcohol consumption, rising obesity and delayed diagnosis. Between 2010 and 2020, alcohol consumption is the primary factor that caused 63% of liver transplantation (Foundation for Liver Research, 2026).

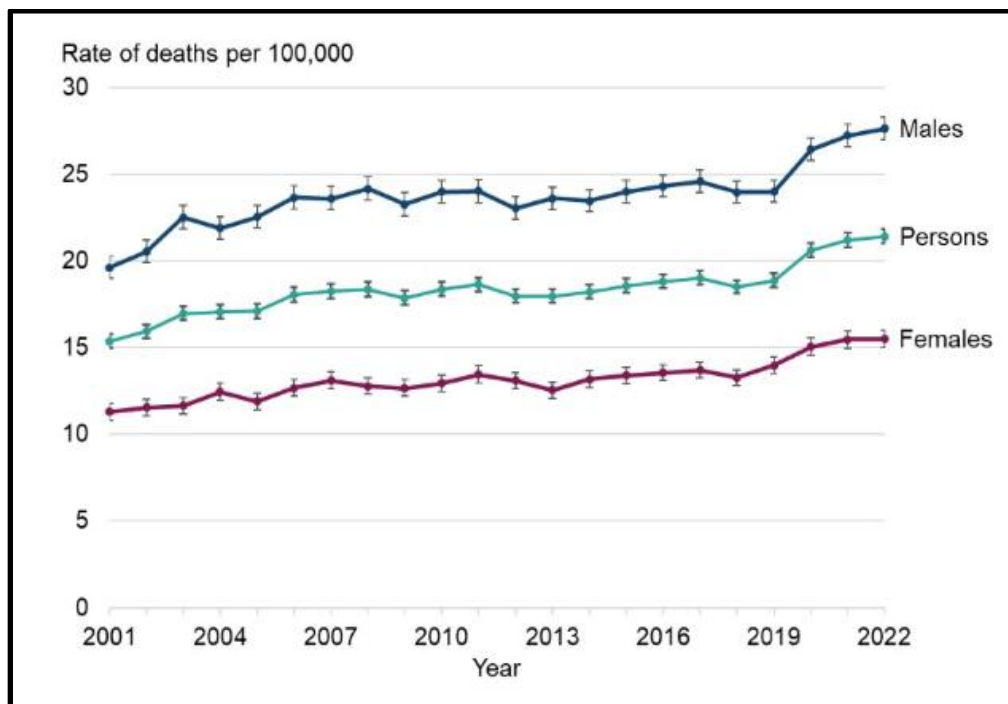


Figure 1: Mortality rate due to liver diseases

(Source: GOV.UK, 2024)

In England, the mortality rate from liver diseases has surged and increased by 21.4% in 2022 (GOV.UK, 2024). This highlights that the liver cirrhosis rate has significantly surged over the past decades. Therefore, this healthcare burden needs proper digital health support to reduce the prevalence rate.

OVERVIEW OF CIRRHOCARE

For treating liver cirrhosis digitally, CirrhoCare is an effective multi-modal monitoring system which is designed to assess cirrhosis complications through proprietary algorithms and provide actionable insights for making clinical decisions (CirrhoCare, 2026).



Figure 2: CirrhoCare Remote Monitoring and Management

(Source: CirrhoCare, 2026)

All wearables and sensors automatically sync with the CirrhoCare platform for analysing real-time data and tracking trends to facilitate decisive clinical decisions (CirrhoCare, 2026).

EFFECTIVENESS OF CIRRHOCARE

With the integration of advanced monitoring technology, the CirrhoCare platform leverages comprehensive remote patient monitoring facilities that are required for cirrhosis patients (CirrhoCare, 2026). Based on the Technology Acceptance Model (TAM), the selected digital technologies' usefulness and ease of use influence continuous adoption of CirrhoCare which offers sustained engagement to prevent liver cirrhosis (Louissaint et al., 2020). The technological intervention promotes public health in various ways which will be demonstrated below:

- Digital blood pressure monitors take frequent BP measurements with minimal aggravation (Konstantinidis et al., 2022).

- CirrhoCare monitors patients' heart rate through smartwatches and phones (Greenham et al., 2025).
- The digital platform also secures data transmission to CyberLiver settings that remind users of cognitive assessments (Gananandan et al., 2025).

CRITICAL EVALUATION

Strengths

- As a digital healthcare system, CirrhoCare reduces hospital admission rates across the EU (McCall, 2026).
- The continuous monitoring process also helps to detect cardiovascular, hepatic disorders and renal deterioration related to the cirrhosis cohort (Cyberliver, 2026).
- The CirrhoX engine enables early detection of cirrhosis complications (Cyberliver, 2026).

Limitations

- Due to a lack of digital knowledge patients experience language barriers based on CirrhoCare's practical usage (UCL, 2026).
- Muscle weakness causes difficulties for older adults to handle wearable devices like smartwatches (McCall, 2026).
- The digital app is not supported on mobile OS platforms, BlackBerry, Windows Mobile and Huawei App Gallery (CirrhoCare, 2026).

RECOMMENDATIONS

To embrace the digital platform's long-term effectiveness, CirrhoCare needs to facilitate multilingual interfaces that will sustain patient engagement and analyse high-quality clinical evaluation (Streichen et al., 2024). Moreover, it will require increased ecosystem support for better accessibility for all patients.

CONCLUSION

The overall discussion demonstrates the potential effectiveness of CirrhoCare in the prevention and self-management of liver cirrhosis which depends immensely on high-quality clinical evaluation.

REFERENCES

CirrhoCare (2026) *Revolutionary Digital Therapeutic for Cirrhosis Management*. Available at: <https://cirrhocare.com/> (Accessed: 20 July 2026).

Cyberliver (2026) *Continuous care for the most complex liver patients*. Available at: <https://www.cyberliver.com/cirrhocare.html> (Accessed: 20 July 2026).

Foundation for Liver Research (2026) *Liver Disease in the UK*. Available at: https://www.liver-research.org.uk/about_the_foundation/liver_disease_in_the_uk.aspx (Accessed: 20 July 2026).

Gananandan, K., Kazankov, K., Tapper, E.B. and Mookerjee, R.P. (2025) 'The new digital era in decompensated cirrhosis', *The Lancet Digital Health*, 7(1), pp.e54-e63.

GOV.UK (2024) *Liver disease profile, April 2024 update*. Available at: <https://www.gov.uk/government/statistics/liver-disease-profile-april-2024-update/liver-disease-profile-april-2024-update> (Accessed: 20 July 2026).

Greenham, O., Gananandan, K., Balaji, A., Kazankov, K., Thomsen, K.L., Bamber, J., Philip, J., Wadke, A., Sadique, Z., Raja, M. and Boddu, R. (2025) 'Prospective multicentre randomised controlled trial to assess the clinical effectiveness of the novel CirrhoCare digital therapeutic management system: a study protocol', *BMJ open*, 15(7), p.e098725. Available at: <https://doi.org/10.1136/bmjopen-2024-098725>

Konstantinidis, D., Iliakis, P., Tatakis, F., Thomopoulos, K., Dimitriadis, K., Tousoulis, D. and Tsioufis, K. (2022) 'Wearable blood pressure measurement devices and new approaches in hypertension management: the digital era', *Journal of human hypertension*, 36(11), pp.945-951. Available at: <https://www.nature.com/articles/s41371-022-00675-z>

Louissaint, J., Lok, A.S., Fortune, B.E. and Tapper, E.B. (2020) 'Acceptance and use of a smartphone application in cirrhosis', *Liver International*, 40(7), pp.1556-1563. Available at: doi:10.1111/liv.14494.

McCall, B. (2026) *Remote Monitoring in Cirrhosis Could Reduce Admissions*. Available at: <https://www.medscape.com/viewarticle/remote-monitoring-cirrhosis-could-reduce-admissions-2026a1000hwz?form=fpf> (Accessed: 20 July 2026).

NHS Inform (2026) *Cirrhosis*. Available at: <https://www.nhsinform.scot/illnesses-and-conditions/stomach-liver-and-gastrointestinal-tract/cirrhosis/> (Accessed: 20 July 2026).

Streichen, I., Wilson, P., Eltalhi, T., Piche, K., Tschida-Reuter, D., Howard, D., Sutor, B., Tiong, I., Herasevich, S., Pickering, B. and Barwise, A. (2024) 'Harnessing health information technology to promote equitable care for patients with limited English proficiency and complex care needs', *Trials*, 25(1), p.450.

UCL (2026) *CirrhoCare*. Available at: <https://www.ucl.ac.uk/comprehensive-clinical-trials-unit/research-projects/2026/mar/cirrhocare> (Accessed: 20 July 2026).

Blog 2: Designing LiverCare AI: An Intelligent Digital Health Platform for Self-Management and Prevention of Liver Cirrhosis

INTRODUCTION

Liver cirrhosis remains a major public health concern as it increases morbidity and mortality rates. As a global burden, it causes various liver injury mechanisms such as hepatocyte degeneration, necrosis, irreversible fibrosis and many more (Duo et al., 2025). To manage this public health issue, CirrhoCare has facilitated remote monitoring but it still consists of some challenges, including limited behavioural support and unequal accessibility. Therefore, to minimise these barriers, the blog introduces a new digital health intervention, LiverCare AI that offers intelligent clinical treatment to liver cirrhosis patients.

PUBLIC HEALTH PROBLEM

As a significant global health concern, liver cirrhosis brings a variety of illnesses to human bodies, such as diabetes, hepatitis B and C (Faruk et al., 2026).

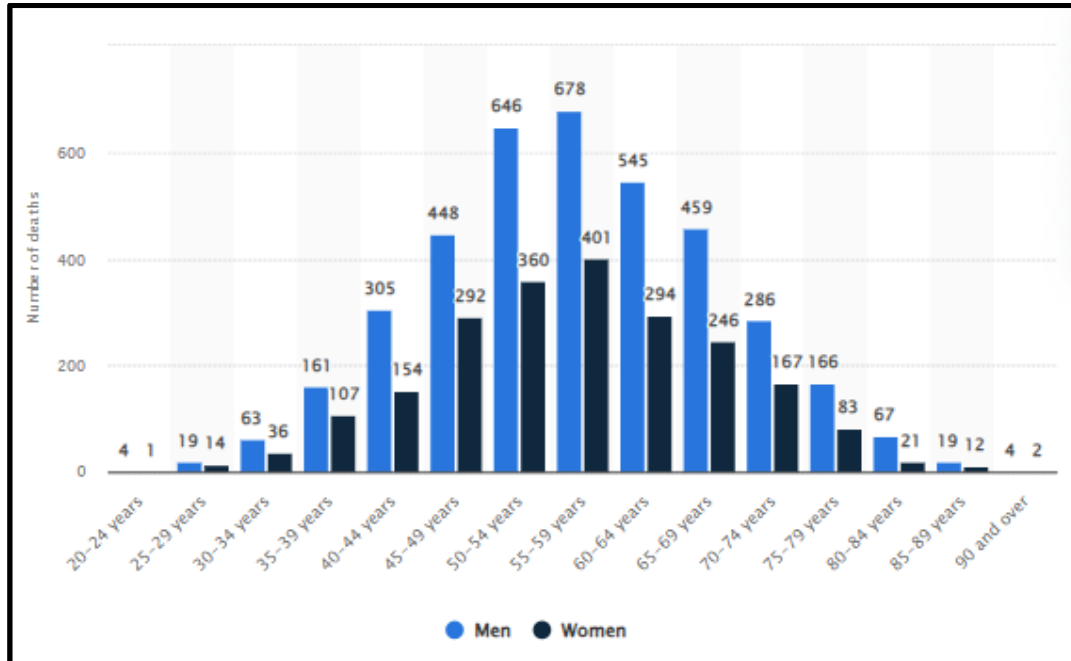


Figure: UK people deaths due to liver disease

(Source: Stewart, 2022)

As of 2021, 678 men and 401 women aged between 55 to 59 years old UK people died due to liver diseases which signifies patients' high mortality rate (Stewart, 2022). It is a major concern due to its cause of people's life-threatening failure. Hence, to prevent this mortality rate and support patients living with cirrhosis, LiveCare AI will provide its personalised behavioural coaching and clinical decision support.

DESIGNED TECHNOLOGY: LIVERCARE AI

LiveCare AI will be a next-generation AI-driven digital health platform which integrates remote monitoring with personalised behavioural coaching to facilitate people living with liver cirrhosis. The technology will offer mobile health interventions for medication reminders and use AI to deliver personalised recommendations (Kim et al., 2025). It will also support the use of wearable technology like a smartwatch to monitor daily activities, heart rate, blood pressure and weight, and sleeping duration (Masoumian Hosseini et al., 2023).

HEALTH PROMOTION INTERVENTIONS

Unlike CirrhoCare, LiverCare AI will contribute to predicting the estimated risk of liver infection and hepatic encephalopathy which provides early signs of hospital admissions. Next, a personalised lifestyle coach will offer behavioural and mental wellbeing support such as nutrition consumption, alcohol reduction and sodium intake (Loughnane et al., 2025). Based on the Self-determination theory, patients will be able to select their personalised health goals and boost self-confidence by following healthcare professionals' guidance (Wu et al., 2022). As well as opening up a caregiver portal for family members to guide medication adherence and assist with appointments where multiple language facilities and voice commands will be included (Wu et al., 2019). Hence, the health problem will be diagnosed early and receive better clinical support from personalised coaches and families.

ADVANTAGES AND DISADVANTAGES

❖ Advantages

- AI-powered earlier identification of liver complications for better patient empowerment (Rele and Patil, 2023).
- Personalised dietary management and better clinical support (George et al., 2026).
- Greater continuity of care through medication adherence and family support (Ojo et al., 2024).

❖ **Disadvantages**

- Dependence on reliable internet access for LiverCare AI.
- Over-reliance on AI deployment may cause cybersecurity threats (Mbah and Evelyn, 2024).

RECOMMENDATIONS

To deliver AI-generated alerts to patients, LiverCare AI will need to integrate clinician oversight to validate predicted algorithms for individual patient needs. Alongside, implement a strong data governance system to ensure cybersecurity measures against any digital threats.

CONCLUSION

The entire discussion synthesised that LiverCare AI would be suitable for improving self-management, early detection of liver complications and continuity of care through AI integration and personalised behavioural support.

References

- Duo, H., You, J., Du, S., Yu, M., Wu, S., Yue, P., Cui, X., Huang, Y., Luo, J., Pan, H. and Ye, Q. (2025) 'Liver cirrhosis in 2021: Global Burden of Disease study', *Plos one*, 20(7), p.e0328493. Available at: <https://doi.org/10.1371/journal.pone.0328493>
- Faruk, O., Ahmed, K.U., Ishrat, N., Mrittika, S.A., Alam, S., Hasan, M., Tanjum, F.A., Mohammad, N., Mahmud, A. and Amin, M.N. (2026) Liver cirrhosis: epidemiology, risk factors, potential complications, and possible treatment strategies. *Gastroenterology & Endoscopy*. Available at: <https://doi.org/10.1016/j.gande.2026.03.001>
- George, E.S., Sood, S., Sualeheen, A., Cartledge, S., Roberts, S.K., Daly, R.M., Tan, S.Y., Scott, D., Wheeler, K., George, J. and Keating, S.E. (2026) 'Culturally adapted multimodal lifestyle approaches for metabolic dysfunction-associated steatotic liver disease: role of diet, physical activity and sleep', *Proceedings of the Nutrition Society*, pp.1-13. Available at: <https://doi.org/10.1017/S0029665126103048>
- Kim, S.K., Park, S.Y., Hwang, H.R., Moon, S.H. and Park, J.W. (2025) 'Effectiveness of mobile health intervention in medication adherence: a systematic review and meta-analysis', *Journal of medical systems*, 49(1), p.13. Available at: <https://doi.org/10.21203/rs.3.rs-3440357/v1>
- Loughnane, C., Laiti, J., O'Donovan, R. and Dunne, P.J. (2025) 'Systematic review exploring human, AI, and hybrid health coaching in digital health interventions: trends, engagement, and lifestyle outcomes', *Frontiers in Digital Health*, 7, p.1536416. Available at: <https://doi.org/10.3389/fdgth.2025.1536416>
- Masoumian Hosseini, M., Masoumian Hosseini, S.T., Qayumi, K., Hosseinzadeh, S. and Sajadi Tabar, S.S. (2023) 'Smartwatches in healthcare medicine: assistance and monitoring; a scoping review', *BMC Medical Informatics and Decision Making*, 23(1), p.248. Available at: <https://doi.org/10.1186/s12911-023-02350-w>

Mbah, G.O. and Evelyn, A.N. (2024) 'AI-powered cybersecurity: Strategic approaches to mitigate risk and safeguard data privacy', *World Journal of Advanced Research and Reviews*, 24(3), pp.310-327. Available at: <https://doi.org/10.30574/wjarr.2024.24.3.3695>

Ojo, S., Okoye, T.O., Olaniyi, S.A., Ofochukwu, V.C., Obi, M.O., Nwokolo, A.S., Okeke-Moffatt, C., Iyun, O.B., Idemudia, E.A., Obodo, O.R. and Mokwenye, V.C. (2024) 'Ensuring continuity of care: effective strategies for the post-hospitalization transition of psychiatric patients in a family medicine outpatient clinic', *Cureus*, 16(1). Available at: DOI: 10.7759/cureus.52263

Rele, M. and Patil, D. (2023) 'Revolutionizing liver disease diagnosis: AI-powered detection and diagnosis', *International Journal of Science and Research (IJSR)*, 12, pp.401-7.

Stewart, C. (2022) *Number of deaths caused by alcoholic liver disease in England in 2021, by gender and age*. Statista. Available at: <https://www.statista.com/statistics/394199/alcoholic-liver-disease-related-deaths-by-gender-and-age-in-england/?srsltid=AfmBOoormW1dBQcjJvnL6ZwtlVWnXxgshCX8O0WjrqtvMRmmzAQmPKu9> (Accessed: 20 July 2026).

Wu, J.R., Mark, B., Knafl, G.J., Dunbar, S.B., Chang, P.P. and DeWalt, D.A. (2019) 'A multi-component, family-focused and literacy-sensitive intervention to improve medication adherence in patients with heart failure—A randomized controlled trial', *Heart & Lung*, 48(6), pp.507-514. Available at: doi:10.1016/j.hrtlng.2019.05.011.

Wu, R., Feng, S., Quan, H., Zhang, Y., Fu, R. and Li, H. (2022) 'Effect of Self-Determination Theory on Knowledge, Treatment Adherence, and Self-Management of Patients With Maintenance Hemodialysis', *Contrast media & molecular imaging*, 2022(1), p.1416404. Available at: <https://doi.org/10.1155/2022/1416404>