

LCHS7009 - Population Health and Digital Health Promotion

ASSIGNMENT TITLE: COMPONENT 1

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DIGITAL HEALTH AND OBESITY: THE FUTURE OF WEIGHT MANAGEMENT

Obesity has become one of the most pressing global health challenges contributing to millions of deaths each year (Razzaque et al., 2018). In 2019 alone, high BMI levels contributed to an estimated five million deaths worldwide (WHO, 2024). While technological progress was a major contributor to the rising obesity rates, it now also offers solutions. In recent years, digital tools and wearable technologies have offered innovative ways to encourage healthier behaviours, monitor progress, and support sustainable weight management (Cooper et al., 2018). The NHS Digital Weight Management Programme is an example of such initiatives.

THE BURDEN OF OBESITY

Globally, obesity rates have risen sharply with the prevalence among children aged 5 to 19 quadrupling from 2% to 8% between 1990 and 2022, while adult obesity more than doubled from 7% to 16% (WHO, 2024). In the UK, obesity rates show no sign of decline, recent analysis estimates that by 2040, over 21 million adults in the country will be living with obesity (Smith, 2022). Obesity increases the risk of chronic diseases, including heart disease, stroke, diabetes, musculoskeletal disorders, and several cancers. Without intervention, people with obesity face serious lifelong health complications, highlighting the urgent need for effective prevention and management strategies (Kinlen et al., 2018; Segula, 2014 & Ansari et al., 2020).



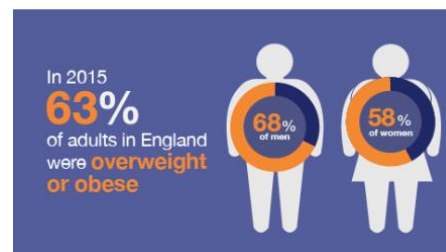
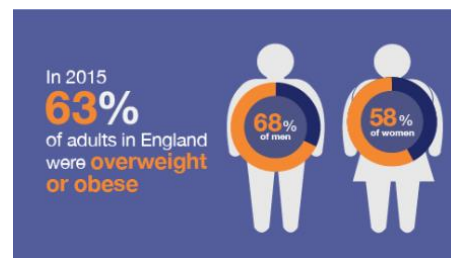
GLOBALLY...

2.5 billion adults are overweight
890 million are obese
4 to 5 million deaths annually

IN THE UK...

64% of adults are overweight
29% of adults are obese
1.2 million hospital admissions
£6.5 annual costs to the NHS

References: (WHO, 2024) & (NHS, 2023).



References: (UK Government, 2025)

TACKLING OBESITY WITH TECHNOLOGY

The UK is among the most digitally connected nations in the world. As of 2025, over 60 million people, approximately 98% of the population, has access to internet (Statista, 2025). This rapid growth of digital connectivity created new opportunities for using technology to support public health interventions. Technology makes it easier to reach more people, is more cost-effective, and is easier to use than traditional methods (Carter et al., 2012). It can help track diets and monitor progress, as well as support research on health trends. Unlike traditional approaches, which are slow and costly, digital tools offer a quicker and more practical way to track eating habits and support weight loss and management (Elliott et al., 2022).



The NHS Digital Weight Management Programme is one such initiative. In response to the COVID-19 pandemic, the NHS developed a nationally available digital weight management intervention, launched in 2021 (NHS, 2025). The 12-week programme is delivered via software applications and web platforms, focusing on four core areas: managing mindset, understanding weight change and nutrition, building healthy habits through behavioural support, and providing peer support. By providing users with these tools, it empowers them to self-monitor and adjust behaviours, a critical component of effective weight management (NHS, 2025).

IMPACT

Research indicates that participants who completed the programme achieved clinically meaningful weight loss, averaging 3.9 kg, and these results were consistent across different socioeconomic groups, demonstrating effectiveness for a diverse population (Taylor et al., 2024).

Overall, this demonstrates how digital interventions can effectively tackle obesity and reduce health inequalities. However, limitations remain. Limited digital access among older adults and individuals from lower-income households restricts the reach (Mizrachi et al., 2020). Additionally, short-term engagement is a challenge, as many users lose motivation, and while the 12-week programme supports initial weight loss, sustained long-term maintenance may require ongoing guidance and follow-ups (Robertson et al., 2022 & Taylor et al., 2024).

To address these limitations, the NHS could provide digital literacy support and offer offline alternatives for those without technology access. Long-term engagement could be improved through follow-up modules or periodic check-ins. In addition, AI could be used to provide more tailored programs for individuals



ECZEMAPAL:

How a Simple App Could Transform Eczema Self-Care

Often referred to as “the itch that rashes”, eczema, is a stubborn and frustrating skin condition that leaves millions scratching for relief. Although not contagious, this condition causes dry, itchy, and inflamed skin that often leads to sleepless nights, visible rashes, and even infections (Nemeth et al., 2022). For many, it’s not just a skin problem; it’s a daily battle that affects quality of life. These challenges highlight a clear public health need for accessible tools that empower individuals to better manage eczema.

THE BURDEN OF ECZEMA

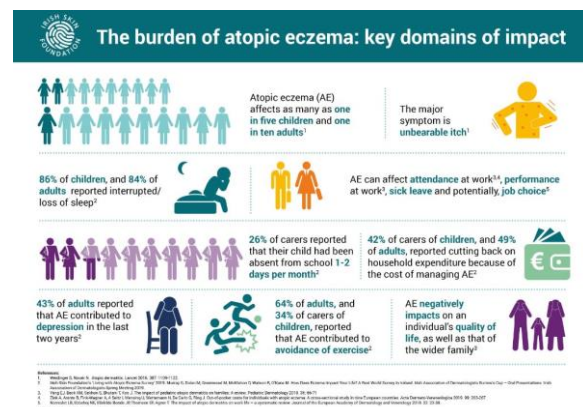
Eczema is a highly prevalent disease in children and adults worldwide with cases consistently rising every year (Oh et al., 2025). Globally it is estimated that approximately 2.6%, or close to 204.05 million people are affected (Durango et al., 2024). In the UK, the condition affects 1 in 5 children and 1 in 10 adults and places a major economic burden on families and the NHS (National Eczema Society, 2025). In 2020, the NHS spent an estimated £257 million treating mild-to-moderate eczema (Dawson, 2023).

TYPE OF COSTS	COSTS IN 2020 (£)
GP visits	£179.09m
Referrals	£71.76m
Prescriptions	£7.12m

Reference: NHS Eczema costs (Dawson, 2023).



Eczema extends far beyond the skin, carrying personal, social, and financial costs. Adults with eczema experience significant productivity losses, estimated between £6,741 and £14,166 per person annually due to absenteeism and reduced work performance (Dawson, 2023). This financial strain is worsened by prescription charges, with nearly half of adults and caregivers reporting reduced household spending to afford treatments (Murray, 2020). The emotional burden is equally profound: 43% of adults report depression and +80% of adults and children reporting sleep disruption due to chronic itching (Murray, 2020).

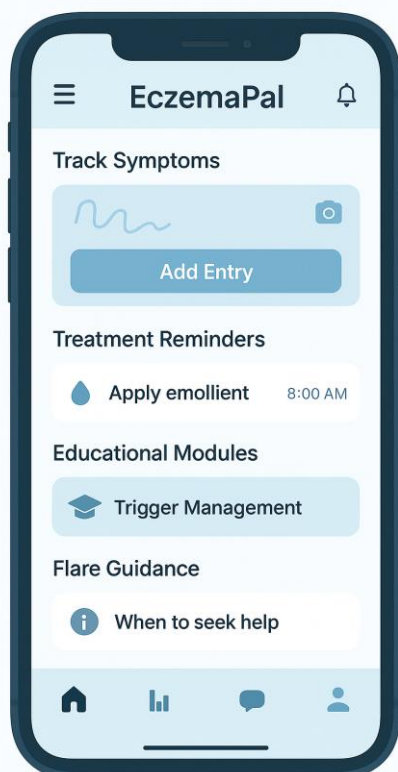


Reference: The Burden of atopic eczema (Murray, 2020).

DESIGNING THE DIGITAL SOLUTION: ECZEMAPAL

Managing eczema can be demanding, often requiring multiple daily treatments which takes up to 2+ hours daily affecting routines and social life, (Murray, 2020). This complexity is a major contributor to poor adherence. Many patients struggle to maintain consistent use of emollients and topical therapies due to inconvenience, fear of side effects, forgetfulness, or limited understanding of their condition (Tier et al., 2021). Research shows that adherence to topical treatments can drop by around 70% within just a few days of starting a regimen (Krejci-Manwaring et al, 2007).

Effective management therefore relies not only on medical treatment but also on behavioural support (Alyafei et al., 2024), this is where EczemaPal comes in:



The app aims to support people living with eczema by utilising behaviour-change principles which enhance motivation and promote long-term adherence: self-monitoring, goal-setting, and timely feedback (Michie et al., 2011). Key features include a symptom and photo diary to visualise progress, personalised treatment reminders for emollient and steroid use, educational modules on trigger management, steroid safety, and infection signs; and decision-support tools guiding users through flare management with clear “when to seek help” prompts. EczemaPal also allows users to share progress reports with clinicians, promoting continuity of care.

Previous interventions have included GP-led clinics, community education, and symptom-tracking apps, but many lack personalised behavioural support (The British Association of Dermatologists, 2019).

OVERCOMING LIMITATIONS

Challenges for EczemaPal include user engagement drop-off, limited accessibility for those without technology, privacy concerns, and the need for clinical validation (Tier et al., 2021). To overcome these barriers, EczemaPal would be co-designed with patients, caregivers, and healthcare professionals to ensure accessibility and relevance. Behaviour-change techniques such as streaks and rewards could maintain engagement (Jakob et al., 2022 & Florian et al., 2020). Finally, data security would follow NHS Digital standards (NHS, 2025).



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