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DEVELOPMENT AND IMPLEMENTATION OF A HEALTH AND WELL-BEING INDEX TO INFORM RISK MANAGEMENT AND PATIENT ENGAGEMENT IN A COLOMBIAN HEALTH INSURANCE

RWD61

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Introduction

Health systems and insurers are challenged to foster healthier lifestyles as they strive to control the growing costs associated with healthcare and occupational health management.

In Colombia, a major health insurer sought to shift from reactive care to proactive wellness promotion.

The challenge was to develop a scalable, data-driven tool to assess individual and population-level wellbeing and use it to guide interventions and inform risk management models.

Objective

To develop and apply a scalable, data-driven Health and Wellbeing Index capable of assessing individual and population-level lifestyle behaviors, guiding personalized wellness interventions, and improving health outcomes and cost management in a Colombian health insurance setting.

Method

- In **2022, a Health and Wellbeing Index was designed to evaluate habits across four domains: nutrition, physical activity, mental health, and financial health**. The index integrates 13 predictive models and over 120 variables to **generate a score from 0 to 100.**
- Based on this score, individuals are classified into three categories: **accompanied** (requiring intensive follow-up), **intermediate** (with partial development of healthy habits), and **self-managed** (with strong, self-sustained habits).
- In **2023, a prospective risk model was developed to evaluate the relationship between index scores and health outcomes (workplace accidents, occupational illness, and mortality)** using data from 5 million insured individuals, **generate a score from 0 to 1.**
- The model incorporated modifiable and non-modifiable risk factors
- Tailored plans are designed for individuals and companies according to insights derived from the Wellness and Prospection Index, complemented by reports that facilitate the management and mitigation of occupational and personal health risks.

Results

The integration of lifestyle data into actuarial models enabled early identification of high-risk individuals and supported more effective interventions at both payer and employer levels.
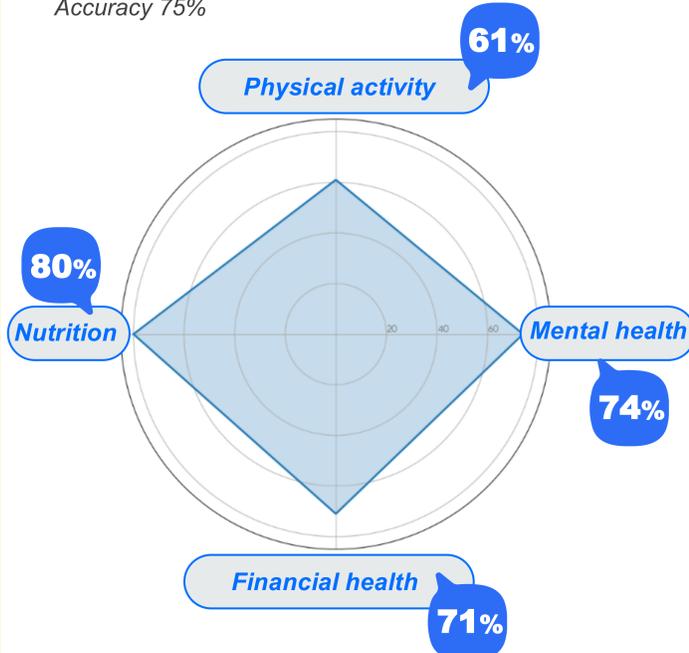
Companies received tailored recommendations based on employee clusters and sector benchmarks. For workers, the prospective risk model demonstrated higher accuracy in predicting occupational accidents and absenteeism.

Patients enrolled in private health plans, the wellbeing index helped improve chronic disease management and reduced healthcare costs associated with non-communicable diseases and became more engaged in their health through increased awareness and tailored support.
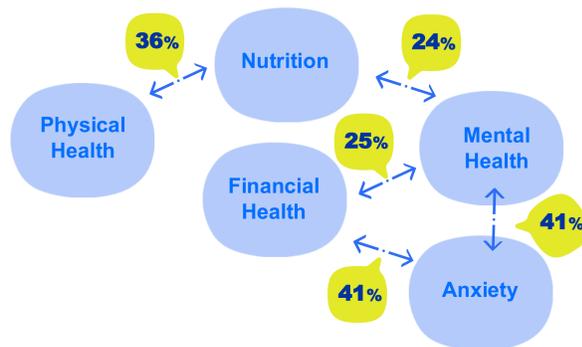
The index not only supported patient self-awareness and engagement but also enhanced decision-making for both insurers and employers.
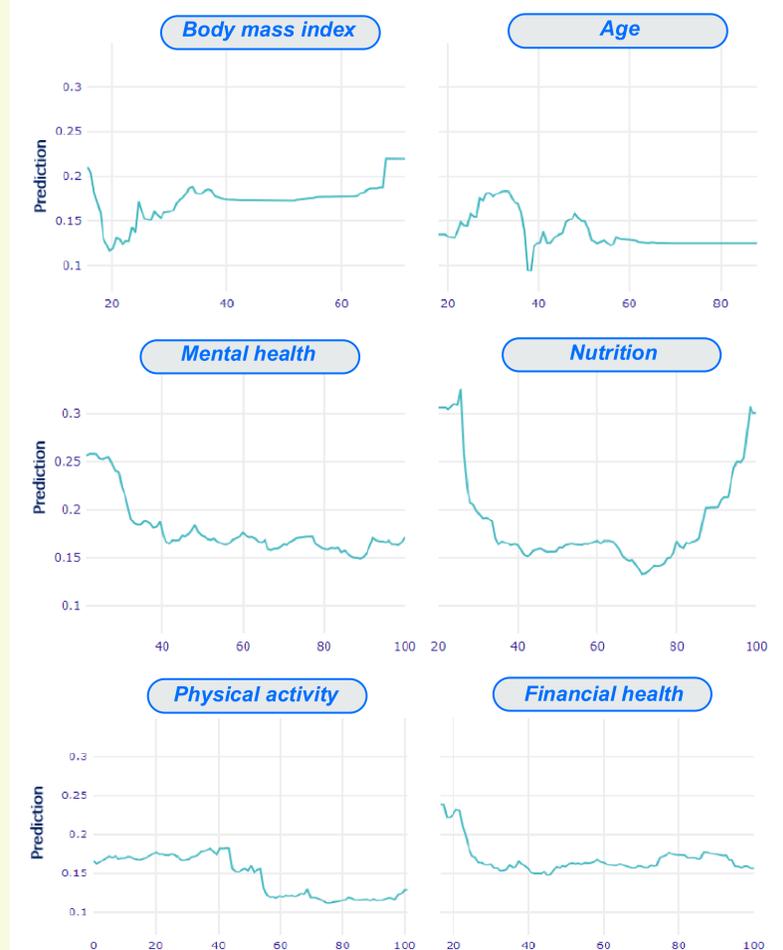
Wellness Index
Accuracy 75%

- Physical activity **61%**
- Mental health **74%**
- Nutrition **80%**
- Financial health **71%**

Correlation Between Habits

- Physical Health — Nutrition **36%**
- Nutrition — Mental Health **24%**
- Financial Health — Mental Health **25%**
- Mental Health — Anxiety **41%**
- Financial Health — Anxiety **41%**

Prospection Index for Workers
Accuracy 91%

Body mass index · Age · Mental health · Nutrition · Physical activity · Financial health

Conclusions

The Health and Wellbeing Index proved to be an effective tool for promoting proactive health management. It supported better clinical, financial, and occupational decision-making for patients, insurers, employers, and public health entities. This approach aligns with Colombia's national health priorities by enhancing prevention, personalization, and population health monitoring.

Payer: The insurer addressed the problem by proactively identifying risk and personalizing wellness strategies to reduce costs and improve outcomes.

Patient: Individuals gained awareness of habits and received personalized guidance for behavior change and disease prevention.

Industry (Employers): Employers applied the index to guide workplace health efforts, particularly in sectors with high illness or injury rates.

Government: The initiative supports public health goals in Colombia and offers valuable data for preventive and occupational health policy development.

References

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