Review Article

Nutrition Tracking Using Service Now for Obesity Patients

Sravanthi Mallireddy

Software Developer, USA

ABSTRACT

A global health concern, obesity raises healthcare expenses, lowers quality of life, and contributes to a number of chronic diseases. Long- term tracking of eating patterns, exercise routines, and general health is necessary for the effective treatment of obesity, but this can be difficult for patients and medical professionals. This thesis investigates how improving nutrition tracking for obese patients may be accomplished with ServiceNow, a cloud-based workflow automation platform. ServiceNow makes it possible to continuously monitor patients' nutritional intake and adherence to recommended meal plans by combining customizable workflows, real-time data analysis, and automated notifications. The study looks at how ServiceNow's capabilities-like task automation, wearable device integration, and real- time dashboards-help healthcare providers make data-driven decisions for individualized obesity management, enhance patient engagement, and expedite the nutrition tracking process.

*Corresponding author
Sravanthi Mallireddy, Software Developer, USA

Introduction
A major public health concern that affects millions of people worldwide is obesity. It is characterized by an excessive buildup of fat that poses a health concern; the Body Mass Index (BMI) is typically used to measure this. Obesity is usually indicated by a BMI of 30 or higher. Over 650 million adults and 340 million children worldwide are classified as obese, representing a threefold increase in the prevalence of obesity since 1975. Controlling obesity is essential because it raises the chance of developing chronic diseases like heart disease, type 2 diabetes, and several types of cancer. Since calorie restriction and food quality enhancement have a direct impact on weight loss, nutritional intervention is essential to managing obesity [1,2]. In this situation, technology-more especially, healthcare platforms like Service Now-is essential in helping patients in their efforts by providing real-time nutrition and other health-related data tracking.
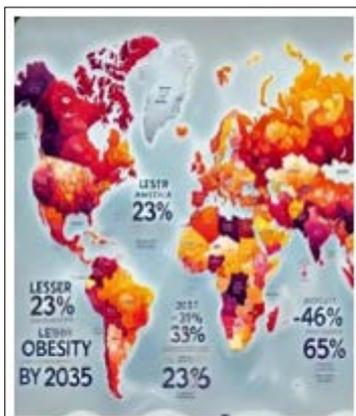

Figure 1: Global Obesity Projections

From the above Figure 1: Global Obesity Projections the high obesity rates (over 65%) are projected in North America, parts of the Middle East, and the Pacific Islands. Moderate rates (36%– 47%) are found in parts of Europe, Central Asia, and Latin America. Lower rates are expected in Sub- Saharan Africa, Southeast Asia, and some other areas [3]. The results indicate that ServiceNow has great potential to improve the management of obesity through improved patient-provider communication, individualized care plans, and real- time nutrition tracking. Predictive analytics and wearable technology are combined to further expand the platform's functionality and provide a complete long-term obesity treatment solution. Issues in Managing obesity: Sustained lifestyle modifications are necessary to manage obesity, and these adjustments pose many difficulties for individuals. Among the main challenges are [4].

Lack of Physical Activity
Due to physical restrictions or a lack of enthusiasm, many obese people struggle to stick to regular exercise regimens.

Poor Nutritional Decisions
Obese people sometimes find it difficult to choose healthful foods, especially when there are few or costly nutritional options available.

Inconsistent Monitoring
Patients frequently deviate from their food and exercise regimens in the absence of routine follow-ups, which can have detrimental effects. Emotional Eating: Emotional eating is frequently caused by psychological causes such as stress, depression, or anxiety, which makes weight loss even more difficult.

Cultural and Environmental Factors
Examine how social customs and cultural views on food might support or undermine a healthy diet. Think about how managing obesity is made more difficult by a culture that is dominated by bad food options and sedentary habits.

Uncertainties for Healthcare practitioners

Time restraints and patient resistance frequently make it difficult for healthcare practitioners to customize individualized treatment programs. Customization is essential, but it takes effort and technology to achieve it well.

Figure 2: Issues of Obesity

Role of Technology in Healthcare

Through the development of new instruments for better patient monitoring, diagnosis, and treatment, technology is revolutionizing the healthcare industry. Through process automation, real-time data collection, and enhanced communication, Service Now-best known for its IT service management capabilities-has increased its presence in the healthcare industry.

Remote healthcare services are now more crucial than ever with to the growth of telemedicine, articularly during the COVID-19 epidemic. Healthcare practitioners can access and evaluate medical and nutritional data in one location by centralizing patient data using platforms like ServiceNow. By offering individualized care plans and forecasting health hazards based on the data gathered, cutting-edge technologies like artificial intelligence (AI) and machine learning improve these systems. Healthcare workers can remotely monitor patient behavior and gain insights into daily routines and how they relate to managing obesity by integrating wearables, apps, and other data- gathering devices [5,6]. Impression of Service Now: A cloud-based software called Service Now streamlines procedures and automates workflows in a number of sectors, including healthcare. By monitoring health data, enhancing communication, and developing tailored procedures for ailments like obesity, its Health Management module helps healthcare providers streamline patient treatment. Healthcare professionals may manage medical records, log and track patient data, and examine patient behavior trends with ServiceNow. Clinics and hospitals of all sizes can use this system since it is scalable, adaptable, and consistent with laws governing the privacy of health data, such as HIPAA in the US. ServiceNow can act as a centralized platform for managing obesity by combining medical record-keeping, patient monitoring, and dietary tracking. Because of its scalability and customization features, the platform may be tailored to meet the demands of different patients and healthcare providers.

ServiceNow can combine several features in the context of managing obesity, including monitoring eating patterns, exercise regimens, and medical information.

ServiceNow may assist with real-time patient progress monitoring, notify medical staff when intervention is required, and give patients the feedback they need to stay motivated by utilizing customized workflows.

Using ServiceNow for Nutrition Tracking

ServiceNow offers robust features that streamline nutrition tracking for obesity patients:

Diet Logs

Patients can enter daily food intake into ServiceNow, allowing healthcare providers to monitor caloric intake, nutrient balance, and adherence to meal plans.

Meal Plan Integration

Customized meal plans can be embedded in the system, making it easier for both patients and providers to track adherence.

Real-Time Alerts

ServiceNow can send real- time alerts if a patient deviates from their

prescribed meal or exercise plan. This promotes accountability and enables timely interventions.

Mobile Access

Patients can log their meals via mobile apps, enhancing engagement and making tracking more convenient.

Feedback Loops

ServiceNow creates automatic feedback loops where healthcare providers can give advice based on patient logs, ensuring more personalized treatment.

ServiceNow guarantees that the nutritional components of managing obesity are regularly observed by integrating nutrition tracking into a workflow. Treatment strategies can be modified based on data by analyzing long-term trends. who did had significant weight loss and improved meal plan adherence over a six-month period. Real-time feedback from the system increased accountability and participation as shown in Figure 3: Patient Dieter [7,8].

Features of ServiceNow in Nutrition Monitoring

A number of capabilities offered by ServiceNow are especially helpful for dietary tracking in the management of obesity:
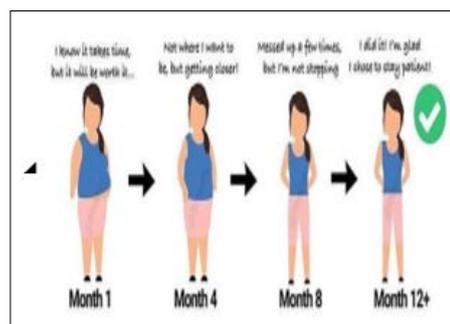
Case Study 2

Figure 3: Patient Dieter

In automation the automating processes, the platform lessens the need for manual tracking and frees up healthcare professionals to

concentrate on patient care. Real-time dashboards: Having a single view of patient data enables medical professionals to promptly and precisely evaluate the patient's progress.

In automatic alarms can be set up to detect changes in calorie consumption or inactivity, allowing healthcare professionals to take prompt action. Predictive analytics: ServiceNow can forecast patient outcomes, including when weight reduction may plateau, by monitoring long-term trends in diet and health.

In wearable Integration thes service Now has the ability to interface with fitness trackers, extracting information on heart rate and physical activity to connect with dietary data. By offering real-time health insights, these features empower patients and healthcare professionals alike. Based on precise and current information, providers can swiftly modify treatment regimens.

Case Study
Case Study 1
Obesity Management Using ServiceNow In this fictitious case study, Healthy Life Clinic, a healthcare facility, used ServiceNow to track the physical activity and diet of obese patients. While ServiceNow automatically tracked calorie intake and compared it to the patient's specified diet, patients were still required to log their meals and exercise. The clinic integrated the platform with wearables to track physical activity and tailored ServiceNow workflows for various diet regimens, including low- carb, Mediterranean, and ketogenic diets. Compared to patients who did not utilize ServiceNow, those

It this, which reveals that patients who utilized ServiceNow for nutrition tracking had better weight loss results and higher compliance than those who used more conventional approaches. The thesis also addresses the difficulties of integrating ServiceNow in the healthcare industry, such as data protection issues, integration problems, and expenses, and suggests ways to get beyond these obstacles.

Integration with Wearable Devices and Mobile Apps
By connecting with wearable technology and health applications, ServiceNow expands its capabilities. These gadgets are able to monitor:

Physical Activity
By tracking steps, heart rate, and calories burned, wearable technology can provide a comprehensive picture of a patient's energy balance. This information can then be paired with nutritional data.

Behavioral Patterns
Wearables monitor daily movement, stress levels, and sleep patterns to provide information about the variables affecting a patient's weight.

Gamification
Through badges, awards, and social sharing of accomplishments, wearable integrations may also employ gamification to inspire patients. ServiceNow assists healthcare providers in developing more thorough and individualized treatment plans by combining data from wearables. Providers can also make real-time modifications based on exercise levels and nutrition thanks to this integration.

Benefits of Nutrition Tracking for Obesity Patients
For patients treating obesity, nutrition tracking via platforms such as ServiceNow offers several advantages:

Real-Time Feedback
Patients stay accountable and make better decisions by receiving real-time insights into their eating patterns.

Personalized Care
Success is increased by data- driven, individualized nutrition regimens that are catered to each person's requirements and tastes.

Better Patient Engagement
Patients are encouraged to take an active role in their own health management through user-friendly solutions such as wearable technology and smartphone apps.

Enhanced Accountability
Patients are held responsible for their everyday health decisions due to the transparency of real-time data sharing with healthcare professionals.

Better Accountability and Support
Because their healthcare practitioners can access the dietary data they collect on systems like ServiceNow, patients who use these tools have greater accountability. This results in prompt interventions and more efficient support networks.

Enhanced Personalization
Real-time data-driven personalized nutrition programs assist in meeting the demands   of each patient, enabling dietary adjustments in response to the program's effects on the body.

Motivational Tools
Patients are more inclined to stick with their program if they can see their progress on dashboards and reports. The ServiceNow app's goal-setting and progress-tracking capabilities could improve this.

Challenges and Considerations in Implementing ServiceNow for Obesity Management
Cost vs. ROI
Talk about the upfront expenses of implementing ServiceNow, especially for smaller clinics, and how better patient outcomes and fewer readmissions to hospitals can eventually result in a return on investment.

Patient Digital Literacy
This is one of the obstacles to using a digital platform such as ServiceNow. Some patients may find it difficult to use the platform for tracking their meals and physical activity, particularly those who are elderly or have poor levels of technological proficiency.

Adoption and Provider Training
Although the platform is user-friendly, healthcare practitioners might require the right instruction to take full advantage of its capabilities. Its uptake in medical contexts might be sluggish without this.

AI and Predictive Analytics in Obesity Management: AI-Based food Suggestions
In the future, ServiceNow may include AI to offer adaptive food suggestions derived from real-time information such as patient preferences, daily activity, and metabolic rates.

Predictive analytics for risk management

AI may also be able to anticipate a patient's risk of obesity-related problems like diabetes or hypertension, enabling preventative measures.

Patient Segmentation

By using machine learning to divide obese patients into groups according to how well they respond to particular diets and workouts, more individualized treatment regimens may be possible.

Conclusion

In conclusion, creative solutions that combine technology and healthcare management are needed to combat the expanding worldwide obesity epidemic. Service Now provides a viable platform for treating obesity through nutrition tracking because of its strong process automation, data tracking, and real-time feedback capabilities. Through the utilization of wearable technology, mobile applications, and predictive analytics, ServiceNow improves healthcare practitioners' capacity to track patient progress, customize treatment regimens, and take swift action when deviations arise. By giving patients real-time insights into their health behaviors, boosting accountability, and encouraging long-term adherence to lifestyle modifications, technology integration not only empowers healthcare providers but also inspires patients. By tackling important issues including irregular monitoring, patient involvement, and the requirement for individualized care, the case studies and examples offered highlight ServiceNow's enormous potential to lessen the burden of obesity [9-17].

References

1. Withrow DA, Alter D (2011) The economic burden of obesity worldwide: a systematic review of the direct costs of obesity. Obes Rev 12:13-141.
2. Kirk SFL, Penney TL, McHugh TLF (2010) Characterizing the obesogenic environment: the state of the evidence with directions for future research. Obes Rev 11:109-117.
3. Armstrong MJ, Mottershead TA, Ronksley PE, SigalRJ, Campbell TS, et al. (2011) Motivational interviewing to improve weight loss in overweight and/or obese patients: a systematic review and meta-analysis of randomized controlled trials. Obes Rev doi:10.1111/j.1467789X.2011.00892.
4. Pagoto S, Schneider K, Jojic M, DeBiasse M, Mann D (2013) Evidence-based strategies in weight-loss mobile apps. Am J Prev Med 45: 576582.
5. Healthc Manag (2021) Jan Frank SR. Digital health care--the convergence of health care and the internet. J Ambul Care Manag 14: 280-289.
6. Boogerd EA, Arts T, Engelen LJ, van de Belt TH (2015) "What is eHealth": time for an update? JMIR Res Protoc.
7. "The Role of Health Informatics in Managing Obesity"
8. "Service Now Implementation in Healthcare: A Case Study" Journal of Health care Informatics.
9. Lake A, Townshend T (2006) Obesogenic environments: exploring the built and food environments. J R Soc Promot Health 126: 262-267.
10. Eysenbach G (2001) What is e-health? J Med Internet Res 3: 2.
11. Vijayalakshmi K, Uma S, Bhuvanya R, Suresh A (2018) A demand for wearable devices in health care. Int J Eng Technol 7: 1.
12. Digital health. World Health Organization. URL: https://www.who.int/health-topics/digital-health#tab=tab_1.
13. Hibbard JH (2017) Patient activation and the use of information to support informed health decisions. Patient Educ Couns100: 5-7.
14. National Institutes of Health: Obesity Statistics and Management Guidelines: NIH Obesity
15. Centers for Disease Control and Prevention (CDC): Obesity and Data Tracking: Obesity Books: "Obesity: Pathophysiology, Psychology, and Treatment" by David J. Goldstein
16. "Healthcare Service Management: A Guide for IT Professionals" by Ajay Bhatia and Michael D. O'Brien
17. "Digital Health: Technologies and Applications" by Homero Rivas and Katarzyna Wac.