

DISSERTATION TRAINING

AT

**NIVA BUPA HEALTH INSURANCE COMPANY**

**NOIDA SEC 59**

(FEB 19<sup>TH</sup> TO MAY 12, 2024)

A REPORT ON

**‘INTEGRATION OF TECHNOLOGY IN WELLNESS PROGRAMS’ AND ITS  
INFLUENCE ON THE HEALTH INSURANCE MARKET: A NARRATIVE REVIEW**

BY

DR MONIKA SAHAY

ENROLLMENT NO: PG/22/055

Under the guidance of

Dr. PREETHA GS

PGDM (HOSPITAL AND HEALTH MANAGEMENT)

2022-24



**International Institute of Health Management Research  
New Delhi**

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New Delhi**



06-May-2024

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **Dr. Monika Sahay** has completed her Internship from our organization. Her training period was from **19-Feb-2024** to **10-May-2024** during which she had worked in **Provider Contracts**.

She has completed the same successfully. She was diligent and persevering and has picked up knowledge and understanding of the applicable concept.

We wish him success in her future endeavors.

**Yours Sincerely,**  
**For Niva Bupa Health Insurance Co. Limited**

A handwritten signature in blue ink that reads "Mohit" with a stylized flourish underneath.

**Mohit Marwaha**  
**Vice President & Head -Talent Acquisition, HRBP & HR Operations**

## Certificate of Approval

Narrative Review:

The following dissertation titled "Integration of Technology in  
wellness Programs & Its influence on HI" at  
"NIVA BUPA" is hereby approved as a certified study in management carried out  
and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of  
**PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by  
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Dissertation Examination Committee for evaluation of dissertation.

Name

Dr. Puneet Chakur  
Dr. Sumant Swain

Signature

Puneet Chakur  
20/10/24  
Sumant Swain

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Dr. MONIKA SAHAY** student of PGDM (Hospital & Health Management) from International Institute of Health Management Research, New Delhi has undergone internship training at NIVA BUPA HEALTH INSURANCE from 19<sup>th</sup> Feb to 12<sup>th</sup> MAY

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific, and analytical. The Internship is in fulfillment of the course requirements. I wish her all success in all her future endeavors.

Dr. Sumesh Kumar

Associate Dean, Academic and Student Affairs  
IIHMR, New Delhi

Dr. Preetha GS

Mentor  
IIHMR, New Delhi

**Certificate from Dissertation Advisory Committee**

This is to certify that Dr Monika Sahay, a graduate student of the PGDM (Hospital & Health Management) has worked under our guidance and supervision. She is submitting this dissertation titled **INTEGRATION OF TECHNOLOGY IN WELLNESS PROGRAMS AND ITS INFLUENCE ON THE HEALTH INSURANCE MARKET: A NARRATIVE REVIEW** at NIVA BUPA Health insurance Company, in partial fulfilment of the requirements for the award of the PGDM (Hospital & Health Management). This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

MR DR PREETHA GS  
PROFESSOR AND DEAN RESEARCH  
MENTOR  
IIHMR, NEW DELHI

  
DINESH GUPTA  
GENERAL MANAGER  
NIVA BUPA HEALTH INSURANCE  
NOIDA

FEEDBACK FORM  
(Organization Supervisor)

Name of the Student: DR. MONIKA SAHAY

Dissertation Internship Institution: NIVA BUPA HEALTH INSURANCE, NOIDA

Area of Dissertation: Integration of technology in wellness  
Programs & its influence on Health  
Insurance market: A Narrative Review

Attendance: 100%

Objectives met: Yes

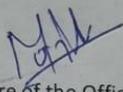
Deliverables: Background of Insurance and Health Insurance

Strengths: Communication

Suggestions for Improvement: Analytical Skill

Date: 21-June-2024

Place: Noida

  
Signature of the Officer-in-Charge

**INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH,  
NEW DELHI**

**CERTIFICATE BY SCHOLAR**

This is to certify that the dissertation titled “**Integration of technology in wellness programs**” and **It’s influence on the health insurance market: A Narrative Review**’ submitted by Dr. Monika Sahay, Enrolment No PG/22/055 under the supervision of Dr. Preetha GS for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from 19<sup>th</sup> Feb to 12<sup>th</sup> May embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

Dr. Monika Sahay



INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH (IIHMR)  
Plot No. 3, Sector 18A, Phase- II, Dwarka, New Delhi- 110075  
Ph. +91-11-30418900, [www.iihmrdelhi.edu.in](http://www.iihmrdelhi.edu.in)

### CERTIFICATE ON PLAGIARISM CHECK

Name of Student (in block letter)	Dr/Mr./Ms.: DR. MONIKA SAHAY		
Enrolment/Roll No.	PG/22/055	Batch Year	2022-2024
Course Specialization (Choose one)	Hospital Management	Health Management	Healthcare IT
Name of Guide/Supervisor	Dr/Prof.: DR. PREETHA GS		
Title of the Dissertation/Summer Assignment	Integration of technology in wellness Programme & its influence on health Insurance Market: A Narrative Review		
Plagiarism detects software used	"TURNITIN"		
Similar contents acceptable (%)	Up to 15 Percent as per policy		
Total words and % of similar contents Identified	6%		
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#### Student

Name: DR. MONIKA SAHAY

Signature: *Monika Sahay*

Dean (Academics and Student Affairs)

Signature:

Date:

(Seal)

## **Acknowledgment**

Words are indeed inadequate to convey my deep sense of gratitude to all those who have helped me in completing this summer project to the best of my ability. Being a part of this project has certainly been a unique and a very productive experience on my part.

I am really thankful to my company guide Mr. Gopal Dutt, Senior Vice-President- Healthcare Purchasing, and Mr. Dinesh Gupta & Mr Mohit Tiwari General Manager- HCP team, for making all kinds of arrangements to carry the project successfully and for guiding and helping me to solve all kinds of queries regarding the project work. His systematic way of working and incomparable guidance has inspired the pace of the project to a great extent.

I am very grateful to my college faculty guide Dr. Preetha GS of IIHMR Delhi, who guided and motivated me on every step taken by me for the completion of the project.

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## **ABOUT THE ORGANIZATION**



Niva Bupa is an Indian health insurance company founded in 2008 and headquartered in New Delhi. It is a joint venture between Fettle Tone LLP (an affiliate of the Indian private equity firm True North) and the UK-based healthcare services company Bupa.

Some key facts about Niva Bupa:

It was formerly known as Max Bupa Health Insurance Company Limited before the name change.

Niva Bupa has over 1.2 crore happy customers and a network of 10,000+ hospitals across India.

They offer a wide range of health insurance plans, including family health, critical illness, personal accident, and travel insurance.

Niva Bupa is known for its fast cashless claim processing, with claims paid within 30 minutes in many cases.

The company has won several awards and recognitions, including 'The Economic Times Best Brands 2019' and 'Product of the Year' for its GoActive Health Insurance Plan.

Niva Bupa's mission is "to give every Indian the confidence to access the best healthcare" by empowering customers with knowledge, expertise, and a range of services.

Overall, Niva Bupa is a leading health insurance provider in India, backed by the expertise of its parent companies Bupa and True North, and focused on delivering high-quality customer service and innovative insurance products.

## **ABSTRACT**

**Background:** The rapid advancement of digital technologies has transformed nearly every aspect of our lives, including the way we approach health and wellness. The integration of technology in wellness programs and the insurance industry has the potential to revolutionize the way insurers approach health and wellness. By leveraging wearable devices and behavioural science, insurers can create more engaging, personalized, and effective wellness programs that incentivize healthy behaviors and improve overall health. Wearable technology is quickly taking over the market because of its practicality, ease of usage, and potential use as fashion items. However, challenges related to privacy, ethical considerations, and adoption barriers also emerged, highlighting the need for strategic approaches to maximize the benefits of these initiatives.

**Objective:** The objective of the study was to critically review the existing research that has been done in health sector and health insurance using wearable device and evaluate the effectiveness of technology-integrated wellness programs to make practical, feasible recommendations to enhance technology-driven initiatives.

**Methodology:** The study design is Narrative literature review, Data was gathered from published articles, electronic sources including Insurance Regulatory and Development Authority of India (IRDAI) and the General Insurance Council, academic journals (e.g., PubMed, Research Gate, ProQuest, Lancet journals), as well as program documents and reports published by national governments and international agencies from 2012 to 2024.

**Results:** The findings demonstrate that the integration of technology in wellness programs has a profound impact on improving health outcomes, increasing user engagement, and offering economic benefits to both individuals and health insurers

**Conclusion:** Integrating technology into wellness programs offers a promising avenue for enhancing health management and reshaping the insurance landscape by providing valuable insights to health insurers, allowing them to better assess and price risks, develop innovative insurance products, and promote healthier behaviors among their insured populations.

## **CHAPTER: 1**

### **INTRODUCTION**

WHO define wellness as “the optimal state of health of individuals and groups,” and wellness is expressed as “a positive approach to living.” Many commonly associate wellness with physical health aspects like diet, exercise, and weight control. The fundamental distinction between health and wellness lies in their nature: health represents the desired state, while wellness embodies the ongoing endeavor to attain it. Achieving wellness is a prerequisite for attaining optimal health; it directly shapes one's overall well-being, crucial for leading a vibrant, content, and satisfying life.

The integration of technology in wellness programs and the insurance industry has the potential to revolutionize the way insurers approach health and wellness. By leveraging wearable devices and behavioural science, insurers can create more engaging, personalized, and effective wellness programs that incentivize healthy behaviors and improve overall health. Wearable technology is quickly taking over the market because of its practicality, ease of usage, and potential use as fashion items.

The preventive healthcare industry, valued at USD \$93 billion in 2021, represents around 36% of the total healthcare sector. Due to the impact of the COVID-19 pandemic, it is projected to experience a Compound Annual Growth Rate (CAGR) of 22% from 2022 to 2025, surpassing the 15% growth expected for the curative sector.

Presently the health plans not only cover a wider range of needs but also embrace a wellness approach. Wellness benefits were limited among health insurers, but recent guidelines from the Insurance Regulatory and Development Authority of India (IRDAI) have given a boost to these initiatives.

The Internet of Things (IoT) has revolutionized numerous industries by enabling devices to collect and share data over the internet. This transformation has turned everyday objects into smart devices, with wearables gaining rapid market penetration due to their convenience, functionality, and fashion appeal. Beyond wearables, IoT has also brought forth various health technologies, including medical devices and mobile apps, designed for data collection and

analysis. These devices generate real-time data, which has become increasingly valuable in our data-driven world.

Insurance companies are now looking to integrate data from IoT devices into their decision-making processes to develop more attractive and profitable policy plans. By leveraging real-time data, insurers aim to create personalized policies that better cater to individual needs while ensuring profitability for the company. This adoption of IoT technology signifies a major shift towards data-driven decision-making and personalized risk assessment in the insurance industry. By leveraging this rich and dynamic data, insurers aim to develop more attractive and profitable policy plans that are tailored to the specific needs and behaviours of individual customers. This shift towards data-driven decision-making allows insurance companies to perform more accurate and personalized risk assessments. For policyholders, this means receiving insurance products that are more closely aligned with their personal risk profiles, potentially resulting in lower premiums and better coverage options. For insurers, the ability to fine-tune risk models with real-time data enhances their capacity to manage risk and improve profitability.

The adoption of IoT technology signifies a major shift from traditional, static models of risk assessment to a more dynamic and continuous evaluation process. This evolution in the insurance industry is expected to drive greater customer satisfaction, foster innovation in product offerings, and ultimately lead to a more resilient and efficient insurance market

## **CHAPTER: 2**

### **RATIONALE**

The health segment of insurance company is of 97, 663.cr market, of which health segment of General Pvt. Insurers is 30.97% of total premium (Over 30kCr.)

The health segment of Public Insurers is 42.16% of total premium (Over 41k Cr)

SAHI standalone health insurers contributes: 26.87% (over 26k Cr)

The health insurance industry is increasingly influenced by IoT technology, transforming wearable devices and other health technologies into valuable sources of real-time data. These devices provide insurers with insights to develop more attractive and profitable policy plans. This dissertation investigates how harnessing IoT data can optimize health insurance offerings, improving outcomes for policyholders and insurers alike.

In recent years, the insurance industry has been undergoing a significant transformation driven by technological advancements. One of the most promising developments in this space is the integration of data from Internet of Things (IoT) devices into the decision-making processes of insurance companies. IoT devices, which include a wide array of connected sensors and smart gadgets, generate a constant stream of real-time data about various aspects of a policyholder's life and environment. This data can range from driving habits monitored by telematics in vehicles, to health metrics tracked by wearable devices, to home security systems that provide insights into property conditions.

In conclusion, IoT has permeated nearly every industry, transforming how businesses operate and engage with their customers. The insurance sector's use of IoT data underscores the potential for IoT to reshape traditional business models and drive innovation in the digital age.

## **CHAPTER: 3**

### **RESEARCH QUESTIONS & OBJECTIVE**

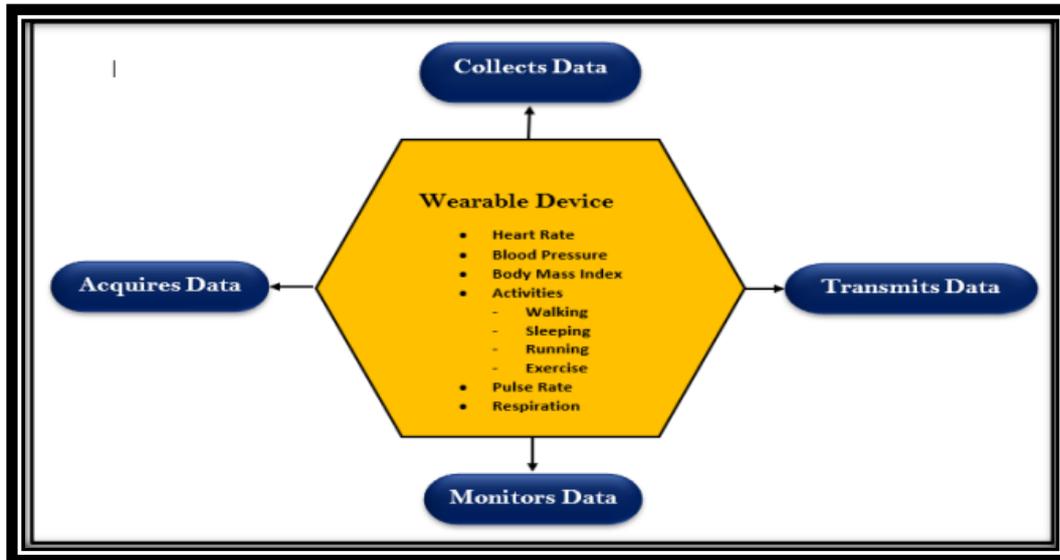
#### **RESEARCH QUESTION**

1. How effective are technology-integrated wellness programs in promoting health outcomes?
2. What practical and feasible recommendations can be made to enhance technology-driven initiatives in the healthcare sector?

#### **OBJECTIVE**

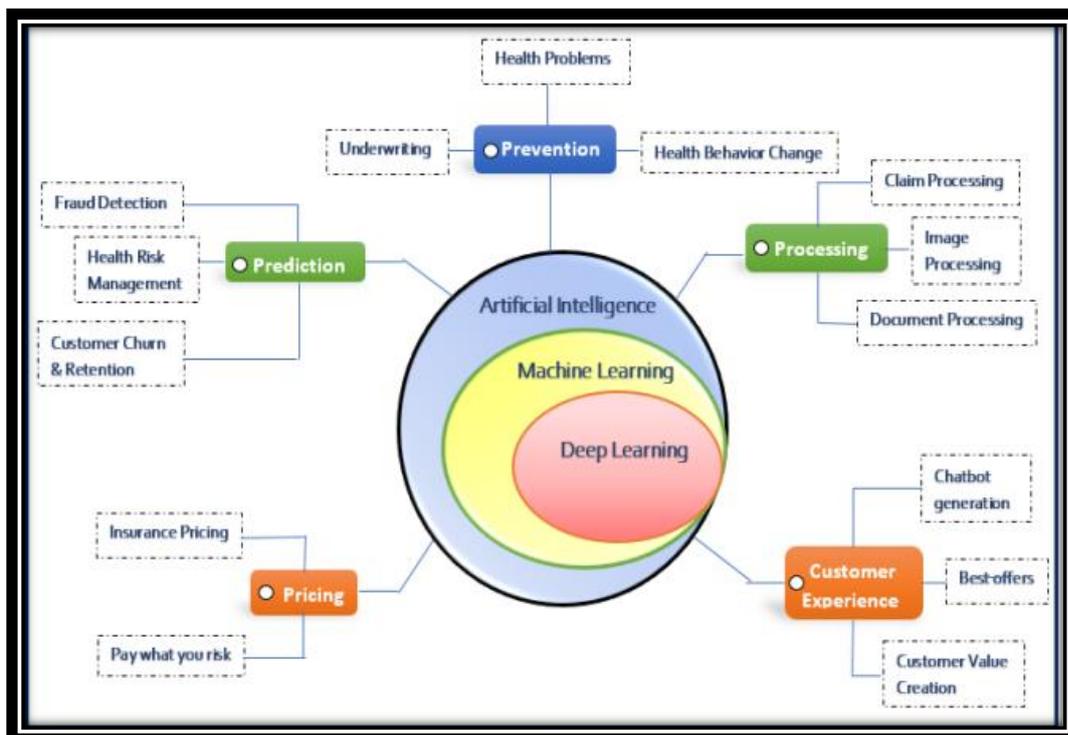
- 1 To critically review the existing research that has been done in health sector and health insurance using wearable device.
- 2 Evaluate the effectiveness of technology-integrated wellness programs.
- 3 To make practical, feasible recommendations to enhance technology-driven initiatives.

## Representation of wearables



## Representation of AI in Insurance use-case

Source: [:10.1088/1757-899X/1042/1/012025](https://doi.org/10.1088/1757-899X/1042/1/012025)



## **CHAPTER: 4**

### **METHODOLOGY**

- **Study Design:** Narrative literature review.

- **Search methods for identification of studies:**

Data was gathered from published articles, electronic sources including Insurance Regulatory and Development Authority of India (IRDAI) and the General Insurance Council, academic journals (e.g., PubMed, Research Gate, ProQuest, Lancet journals), as well as program documents and reports published by national governments and international agencies.

- **Terms:**

\_Search terms such as "wellness," "health insurance," "health program," "health policy," "IoT healthcare," and "health wearable device" will be used both individually and in combination to gather relevant insights.

- **Period:**

\_Last 12 years, from 2012 to 2024

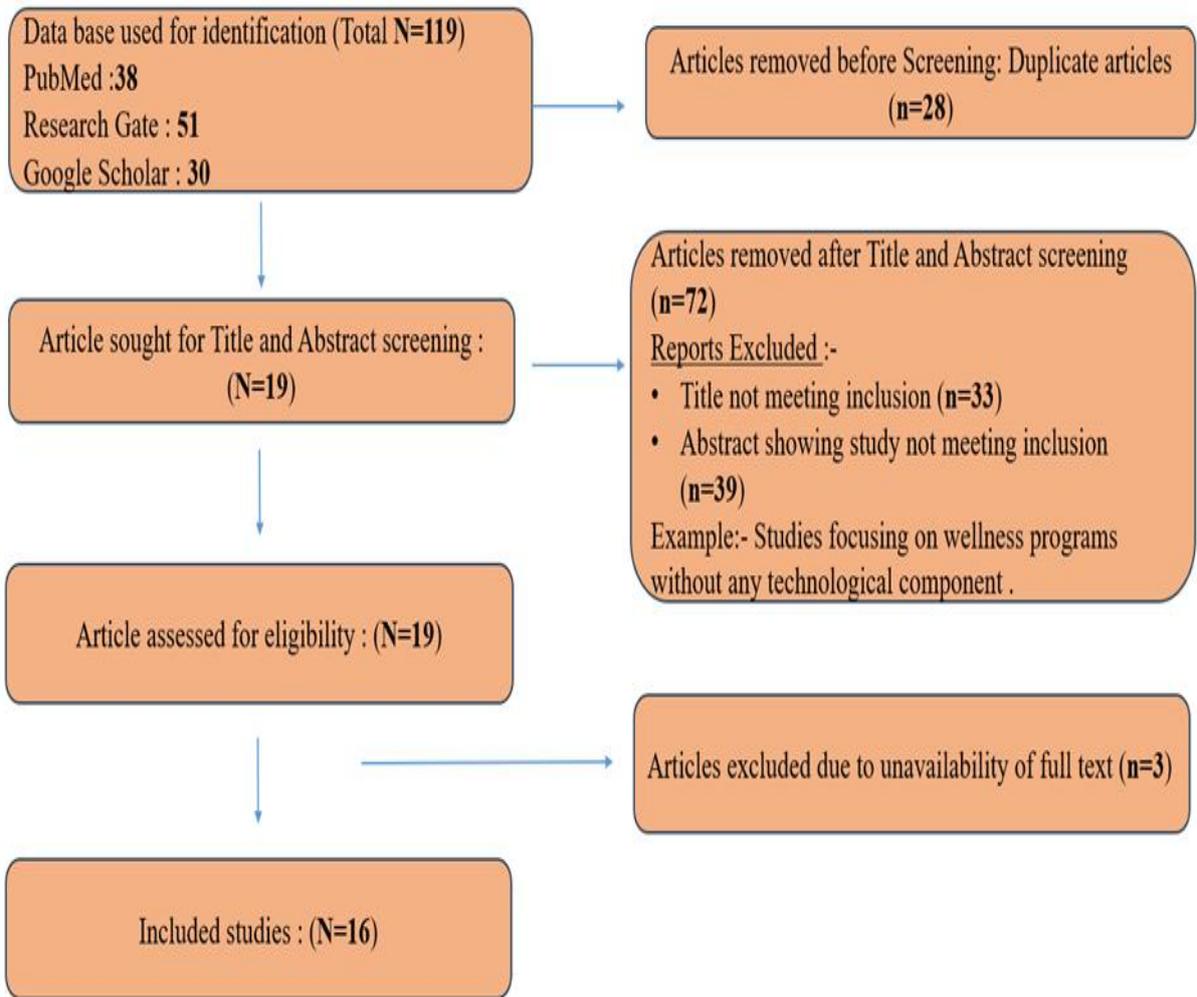
- **Inclusion Criteria:**

English only articles, full –text articles, published, peer-review, review articles.

- **Exclusion Criteria:**

Newspaper reports, news, blogs, websites (Grey literature)

- **Ethical considerations:** - Secondary research – free of ethical concerns.



**CHAPTER: 5**

**RESULT**

<b>S. No.</b>	<b>Article/Paper/Journal Name</b>	<b>Year of publication</b>	<b>Insight</b>
1	HIDDEN TRADE-OFFS IN INSURANCE WELLNESS PROGRAMS	Jan-21	The paper discusses the trend of wellness programs in the insurance industry, where policyholders receive rewards or premium discounts for participating in health education and surveys or meeting health goals.
2	Wellness – A Strong Driver for Health Insurance Market in 2042	2022	<p>1. The next two decades will see a significant focus on wellness across industries.</p> <p>Insurers will become key players in promoting health, leveraging technology.</p> <p>Wearables and health tracking apps will innovate rapidly, driving behavior towards healthy living and mental well-being.</p> <p>2. Insurance companies will use digital and physical means to encourage wellness, aiming for a healthier and more productive population by 2042</p>
3	Method of promoting employee wellness and health insurance strategy for same.		The paper proposes a health insurance strategy where employee benefits are tied to participation in a wellness

			program, promoting healthier lifestyle choices and potentially reducing employer health insurance costs.
4	Private health insurance sponsored wellness programs: Examining participation in the Healthy Lifestyle Rewards financial incentives program on health care costs, utilization, and risk behaviors	2010	Private company sponsored Health insurance and wellness programs, like the Healthy Lifestyle Rewards, offer money incentives to improve health, reduce healthcare costs, and encourage prevention among participants.
5	How to implement a wellness program	Dec-19	Outlines best practices for wellness programs with global examples.  Milliman offers expertise in healthcare systems, wellness programs, and insurance
6	Willingness to adopt wearable devices with behavioral and economic incentives by health insurance wellness programs: results of a US cross-sectional survey with multiple consumer health vignettes	2019	Americans are keen to adopt wearable-based health insurance wellness programs, especially if its incentives related to health benefits and money rewards, to stabilize insurance premiums.

7	Medical Claims According to Wellness Program Participation for a Large Insurance Company in the United States	Nov-18	Participation in a wellness programme was connected with fewer medical claims and reduced overall claim costs.
8	Health and wellness centres: a paradigm shift in health care system of India?	8th Jan 2020	In India, Universal Health Coverage (UHC) through increasing access, improving quality, and lowering the cost of health care services is the stated goal of National Health Policy 2017 and Prime Minister Jan Aarogya Yojana also known as Ayushman Bharat Scheme (ABS) comprises a 'comprehensive' primary health care model operational at the community level through health and wellness centres.
9	The Importance of Health Insurance in the Various Insurance Sectors in India: A Review	20th Nov 2022	Health insurance plays a crucial role in the insurance sector in India, offering coverage for various aspects of daily living like wellness. It is a vital product impacting human life positively.
10	Insurance for Outpatient and Preventive Care - Future of Health Insurance	2nd May 2018	Health insurance companies are starting to offer policies covering outpatient and preventive care, indicating an evolution towards incorporating preventive health measures in their insurance offerings.

11	Navigating Workplace Wellness Programs in the Age of Technology and Big Data	2021	<p>Part I discuss the benefits of workplace wellness programmes. Part II covers the use of wearable technology in workplace wellness programmes. Part III examines the legal and ethical issues surrounding the use of wearable devices in wellness programmes. Part IV proposes soft law, or best practices, as the most effective governance instrument for companies and workers to ensure benefits and balance concerns about the use of wearable devices in workplace wellness programmes.</p>
12	The Fusion of Health Tech and Insure Tech	18th May 2022	<p>Advancements in digital technology have led to the widespread use of wearable health devices like fitness bands. The data collected from these devices, along with other health technologies, is valuable for insurance companies. This data-driven approach helps insurers offer better plans and improve preventive healthcare. The global market for IoT Healthcare Technology has grown significantly, reaching over \$14.6 billion by 2022. Overall, integrating health technology data into insurance practices benefits</p>

			both insurers and policyholders, improving healthcare outcomes and product offerings
13	The economic imperatives for technology enabled wellness centred healthcare	3rd Aug 2022	This study explains how to connect technology with traditional ways to lead public health policy towards wellness-based care models and initiatives, alleviating the cost pressures of managed care.
14	The role of specific technological solutions in the creation of wellness programmes	2020	Integration of technology like InBody 770 and Templo software in wellness programs enhances personalized assessments and treatments, potentially reducing health risks and improving outcomes, impacting the health insurance market positively.
15	Survey on: Applications of Smart Wearable Technology in Health Insurance	2021	Wearables available in the market may assess several health parameters. This study aims to analyse if wearable devices with AI can predict health state and outcomes. AI and wearable technologies have the potential to improve health insurance

			coverage by addressing uncertainties in health, longer life spans, and rising treatment costs.
16	Role of digital health insurance management systems in scaling health insurance coverage in low- and Middle-Income Countries: A case study from Nigeria	2020	Digital health insurance management systems, like MedStrat in Nigeria, enhance health insurance enrolment, especially among low-income households, contributing to expanding coverage and supporting Universal Health Coverage in LMICs.
17	The Impact of Innovative Technologies on the Insurance Market Operation	2019	In this article, conditions, benefits and barriers associated with the application of innovative technologies with special regard to big data analytics, artificial intelligence and the possibility of absorption of innovative products and services by their customers are analysed.
18	Survey on: Applications of Smart Wearable Technology in Health Insurance	2021	Integration of wearable technology with AI in wellness programs can enhance health monitoring, potentially reducing risks for health insurance providers by predicting health

			outcomes and incentivizing fitness-conscious clients.
19	How Connected Insurance Is Reshaping the Health Insurance Industry.	2018	The role of today's insurer is inclined towards preventive, digital or linked approach, and linked health insurance has the potential in providing general wellbeing to the population.
20	Innovation and impact of technology in insurance sector	2018	Technology enhances wellness programs, impacting health insurance market positively. Digital tools enable insurers to engage customers effectively in wellness programs

**CHAPTER: 6**

**DISCUSSION**

## Integration of Technology in Wellness Programs

### 1. Personalized, Accessible, and Effective Health Management:

**Personalization:** Technology allows wellness programs to be tailored to the individual needs of users. Through data collection and analysis, programs can offer personalized recommendations, interventions, and support. This could include customized exercise plans, dietary suggestions, and mental health resources based on an individual's health data and goals.

**Accessibility:** With mobile apps, wearable devices, and online platforms, wellness programs are more accessible than ever. Users can engage with these programs from anywhere, at any time, making it easier to integrate healthy habits into daily life.

**Effectiveness:** The use of technology in wellness programs enhances their effectiveness by providing real-time feedback, tracking progress, and enabling adjustments to strategies based on user data.

### 2. Improved Health Outcomes:

**Disease Management:** Technology facilitates better management of chronic diseases by enabling continuous monitoring and early detection of potential issues. Wearable devices can track vital signs, glucose levels, and other health metrics, allowing for timely interventions.

**Preventive Care:** Wellness programs using technology can help identify risk factors early and promote preventive measures. For instance, apps that encourage regular physical activity and healthy eating can reduce the risk of lifestyle-related diseases.

### 3. Increased User Engagement:

**Personalized Notifications:** Features like personalized notifications and reminders keep users engaged and motivated. These can be tailored to individual preferences and schedules, helping users stay on track with their wellness goals.

**Gamification:** Many wellness apps incorporate gamification elements, such as rewards and challenges, to make the experience more engaging and enjoyable.

#### 4. Economic Benefits:

**For Individuals:** Improved health outcomes lead to reduced medical expenses for individuals. Preventive care and effective disease management can lower the need for costly treatments and hospitalizations.

**For Health Insurers:** Reduced healthcare costs benefit health insurers as well. By promoting wellness and preventing chronic conditions, insurers can decrease the overall cost of care, leading to lower premiums and better resource allocation.

#### Challenges and Considerations:

**Privacy Concerns:** The collection and storage of personal health data raise significant privacy concerns. Ensuring data security and protecting user privacy is paramount.

**Ethical Considerations:** Ethical issues, such as data ownership, consent, and the potential for misuse of information, must be addressed. Clear policies and regulations are necessary to govern the use of health data.

**Barriers to Adoption:** Barriers such as technological literacy, access to devices, and resistance to change can hinder the adoption of technology-based wellness programs. Strategies to overcome these barriers include education, training, and providing affordable access to necessary technologies.

## CHAPTER: 7

### RECOMMENDATION

#### Recommendations for Integrating IoT Data in Insurance Decision-Making

##### 1. Develop Robust Data Management Strategies

**Data Collection:** Implement reliable and secure methods for collecting data from various IoT devices, ensuring data accuracy and consistency.

**Data Storage:** Utilize scalable cloud storage solutions to handle the large volumes of data generated by IoT devices.

**Data Privacy and Security:** Establish stringent data privacy policies and robust cybersecurity measures to protect sensitive customer data from breaches and unauthorized access.

##### 2. Invest in Advanced Analytics and Machine Learning

**Predictive Analytics:** Leverage advanced analytics and machine learning algorithms to analyze IoT data and predict potential risks more accurately.

**Real-Time Processing:** Develop capabilities for real-time data processing to enable immediate insights and timely decision-making.

**Personalization Algorithms:** Use machine learning to create personalized risk profiles and tailor insurance products to individual customer needs.

##### 3. Enhance Customer Engagement and Transparency

**Customer Education:** Educate customers on the benefits of sharing IoT data and how it can lead to better coverage and potentially lower premiums.

**Transparent Policies:** Clearly communicate how IoT data will be used, ensuring customers understand and consent to data usage practices.

**User-Friendly Interfaces:** Develop intuitive interfaces and dashboards where customers can easily view and manage their IoT data and related insurance policies.

#### 4. Foster Collaboration with IoT Device Manufacturers

**Partnerships:** Establish partnerships with leading IoT device manufacturers to ensure seamless integration and data compatibility.

**Standardization:** Work towards standardizing data formats and protocols to facilitate interoperability between different IoT devices and insurance platforms.

**Innovation:** Collaborate on developing new IoT-enabled insurance products that leverage the latest advancements in IoT technology.

#### 5. Implement Regulatory Compliance and Ethical Standards

**Regulatory Adherence:** Stay updated with regulatory requirements related to data privacy, security, and usage in the insurance sector.

**Ethical Considerations:** Ensure ethical use of IoT data, avoiding discrimination or unfair practices based on data-driven risk assessments.

**Consumer Rights:** Respect consumer rights and provide mechanisms for customers to opt-in or opt-out of data sharing arrangements.

#### 6. Continuously Monitor and Improve IoT Integration

**Feedback Loops:** Create mechanisms for continuous feedback from customers and other stakeholders to improve IoT data integration processes.

**Performance Metrics:** Establish key performance indicators (KPIs) to measure the impact of IoT data on policy attractiveness, customer satisfaction, and profitability.

**Innovation and R&D:** Invest in research and development to explore new ways of utilizing IoT data for enhanced insurance solutions

## **CHAPTER: 8**

### **CONCLUSION**

#### **Linking with Objectives:**

##### **Evaluate the effectiveness of technology-integrated wellness programs:**

The findings clearly demonstrate that the integration of technology in wellness programs has a profound impact on improving health outcomes, increasing user engagement, and offering economic benefits to both individuals and health insurers. However, challenges related to privacy, ethical considerations, and adoption barriers also emerged, highlighting the need for strategic approaches to maximize the benefits of these initiatives.

To make practical, feasible recommendations to enhance technology-driven initiatives: Integrating technology into wellness programs offers a promising avenue for enhancing health management and reshaping the insurance landscape.

## CHAPTER: 9

### REFERENCES

1. Prince, Anya, HIDDEN TRADE-OFFS IN INSURANCE WELLNESS PROGRAMS (August 1, 2020). U Iowa Legal Studies Research Paper No. 2020-17, Michigan State Law Review, Forthcoming, Available at SSRN: <https://ssrn.com/abstract=3634922> or <http://dx.doi.org/10.2139/ssrn.3634922>
2. (“2042 Outlook: Wellness Drives Health Insurance Market”)
3. Harris, Z. K. (2010). Private Health Insurance Sponsored Wellness Programs: Examining Participation in the Healthy Lifestyle Rewards Financial Incentives Program on Health Care Costs, Utilization, and Risk Behaviors. *UC Berkeley*. ProQuest ID: Harris\_berkeley\_0028E\_10401. Merritt ID: ark:/13030/m5ws8zft. Retrieved from <https://escholarship.org/uc/item/3h35x5pq>.
4. Dr., Mandyam, Rangayyan, Roopashree., Dr., Dixita, Kapadia. Study on Wellness Programs Offered by the Health Insurance Companies. *International Journal of Preventive Medicine and Health (IJPMH)*, (2024). doi: 10.54105/ijpmh.c1043.04040524
5. Soliño-Fernandez, D., Ding, A., Bayro-Kaiser, E. *et al.* Willingness to adopt wearable devices with behavioral and economic incentives by health insurance wellness programs: results of a US cross-sectional survey with multiple consumer health vignettes. *BMC Public Health* 19, 1649 (2019). <https://doi.org/10.1186/s12889-019-7920-9>
6. *Journal of Occupational and Environmental Medicine* 60(11):p 985-989, November 2018. |
7. Merrill, Ray M. PhD, MPH. Medical Claims According to Wellness Program Participation for a Large Insurance Company in the United States. *Journal of Occupational and Environmental Medicine* 60(11):p 985-989, November 2018. | DOI: 10.1097/JOM.0000000000001417
8. Merrill, Ray M. PhD, MPH. Medical Claims According to Wellness Program Participation for a Large Insurance Company in the United States. *Journal of Occupational and Environmental Medicine* 60(11):p 985-989, November 2018. | DOI: 10.1097/JOM.0000000000001417
9. *International Journal of Industrial Marketing* ISSN 2162-3066/2022, Vol. 7, No. 1|doi:10.5296/ijim.v7i1.20485
10. Graham, B., Jones., Justin, M., Wright. The economic imperatives for technology enabled wellness centered healthcare. *Journal of Public Health Policy*, (2022).;43(3):456-468. doi: 10.1057/s41271-022-00356-8

11. Navigating Workplace Wellness Programs in the Age of Technology and Big Data  
(sciencepolicyjournal.org)<http://doi.org/10.38126/JSPG170104>
  
12. Journal of Public Health Policy (2022) 43:456–468 <https://doi.org/10.1057/s41271-022-00356-8>
  
13. Živković, I. (2020). The Role of Specific Technological Solutions in the Creation of Wellness Programmes.
  
14. Shah, A., Ahirrao, S., Phansalkar, S.P., & Kotecha, K.V. (2021). Survey on: Applications of Smart Wearable Technology in Health Insurance. *IOP Conference Series: Materials Science and Engineering*, 1042.[doi:10.1088/1757-899X/1042/1/012025](https://doi.org/10.1088/1757-899X/1042/1/012025)
  
15. Okuzu, O., Malaga, R., Okerefor, K., Amos, U., Dosunmu, A., Oyeneyin, A., Adeoye, V., Sambo, M. N., & Ebenso, B. (2022). Role of digital health insurance management systems in scaling health insurance coverage in low- and Middle-Income Countries: A case study from Nigeria. *Frontiers in digital health*, 4, 1008458. <https://doi.org/10.3389/fdgth.2022.1008458>
  
16. Available from: <https://www.who.int/data/gho/data/major-themes/health-and-well-being#:~:text=The%20WHO%20constitution%20states%3A%20%22Health,of%20mental%20disorders%20or%20disabilities>
  
17. Stoewen, Debbie L. “Dimensions of wellness: Change your habits, change your life.” *The Canadian veterinary journal = La revue veterinaire canadienne* vol. 58,8 (2017): 861-862.
  
18. Sahni, D.G. (2023). The Fusion of Health Tech and Insure Tech. *International Journal of Transformations in Business Management*.
  
19. Available from: <https://www.chiratae.com/indias-preventive-healthcare-sector-to-reach-a-value-of-usd-197-bn-by-2025-a-report-by-chiratae-ventures-amazon-web-services-aws-and-redseer>
  
20. Available from: <https://irdai.gov.in/guidelines>
  
21. Apeksha, Shah., Swati, Ahirrao., Shraddha, Phansalkar., Ketan, Kotecha. Survey on: Applications of Smart Wearable Technology in Health Insurance. (2021).;1042(1):012025-. doi: 10.1088/1757-899X/1042/1/012025
  
22. Managing health insurance using blockchain technology. (2022).89-125. doi: 10.1049/pbhe048e\_ch4

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