IoT in Health and Wellness

Shanzila Chowdhury
Electrical Engineering and Mathematics
Meredith College
North Carolina State University
shchowdhury@email.meredith.edu

Michael Eakin
METIL, IST
University of Central Florida
meakins@ist.ucf.edu

Dr. David Metcalf and Angela Hamilton
METIL, IST
University of Central Florida
{dmetcalf, ahamilton}@ist.ucf.edu

Abstract

Internet of Things improved the healthcare system by changing the form of communication and the mechanism of different biometric devices or tools. The significant changes not only ensured decreased costs, reduced errors, improved outcomes, disease management, and drug management, and enhanced healthcare opportunities but also significantly promoted healthy lifestyle [1]. Wearable devices are an ideal instance of IoT in healthcare that promoted healthy lifestyle by exchanging data via software between the device and doctor or caretaker by connecting it to the network. Due to the adaptability and portability of wearable devices patients are now receiving care in a variety of ways without being constrained by time, geography, or the level of their condition [4].

We developed a qualitative analysis of different wrist worn fitness trackers and health watches that are promoting healthy and active lifestyle.

Qualitative Study

A comparative table of :
- 20 wrist worn wearables that contribute in promoting healthy and active lifestyle.
- The price range is from $29.99 to $500.

Wearable Devices	Price	Steps, Distance	Activity (Walking, Running, Swimming, etc.)	Sleep	Calories burned	Heart Rate	Blood Pressure	Blood Oxygen Level	ECG	Temperature	SoS
Movband 2	$29.99	✓									
Moov Now	$59.95	✓	✓								
iHealth Wave	$79.95	✓	✓	✓	✓			✓			
Misfit Shine 2	$79.99	✓	✓	✓	✓						
Misfit Ray	$79.99	✓		✓	✓						
Withings Go	$89.99	✓	✓	✓	✓						
Garmin Vivofit 3	$99.99	✓	✓	✓	✓						
Withings Pulse Ox	$119.95	✓		✓	✓	✓		✓			
Fitbit Charge 2	$149.99	✓	✓	✓	✓	✓					
Fitbit Blaze	$149.99	✓	✓	✓	✓	✓					
GoBe 2	$179	✓		✓	✓	✓		✓			
H2	$179+	✓	✓		✓		✓				
Withings Steel HR	$179.99	✓	✓	✓	✓	✓					
Nymi	$199	✓	✓			✓			✓		
Microsoft Band 2	$249	✓	✓	✓	✓	✓				✓	
Philips Health Watch	$249.99	✓	✓	✓	✓	✓		✓			
Helo Lx	$319	✓		✓	✓	✓	✓	✓	✓	✓	✓
Apple Watch Nike+ Series 2	$369.99	✓	✓		✓	✓					
Whoop Strap 2.0	$500	✓	✓	✓		✓				✓	
HeartVue by Omron	Summer 2017	✓	✓	✓		✓					

Table 1. Comparison of 20 wrist worn wearables based on some specific features

iHealth Wave, $79.95
Blood Oxygen Level

GoBe 2, $179
Automatic Calorie Intake

Nymi, $199
On-device authentication using ECG sensors

Wearable Devices

Whoop Strap 2.0, $500
Heart Rate Variability, Exertion, Temperature

Philips Health Watch, $249.99
Clinically validated measurements and algorithm

Helo Lx, $319
Blood Pressure, SoS, ECG

Discussion

- Composed of different sensors as a result they can perform the work of several devices at the same time
- Easier to collect more information with less effort
- Decreased costs, reduced errors, improved outcomes, disease management, and drug management, and enhanced healthcare opportunities [1]
- Create Self- Awareness by keeping users updated about health
- More than 60% physicians recommend their patients to use different wearable devices to keep track of their health status [2]
- Popularity and Affordability: overall number of wearable devices shipped to consumers is expected to be 130 million by 2018 [3]

Acknowledgements

References

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