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ARTICLE

Processed Radio Frequency towards Pancreas Enhancing the Deadly Diabetes Worldwide

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ABSTRACT

Diabetes is a chronic and debilitating disease, which is associated with a range of complications putting tremendous burden on medical, economic and socio-technological infrastructure globally. Yet the higher authorities of health services are facing the excruciating cumulative reasons of diabetes as a very imperative worldwide issue in the 21st century. The study aims to relook at the misapplication of the processed radio frequency that frailties in the pancreas within and around the personal body boundary area. The administered sensor data were obtained at laboratory experiments from the selected specimens on dogs and cats in light and dark environments. The study shows the frequent urine flow speed varies with sudden infection due to treated wireless sensor networks in active open eyes. The overweight and obese persons are increasingly affected in diabetes with comprehensive urinary pressure due to continuous staying at dark environment. The findings replicate the increasing tide of diabetes globally. The study also represents the difficulties of physicians to provide adequate diabetic management according to their expectancy due to insecure personal area network control unit.Dynamic sensor network is indispensable for healthcare but such network is at risk to health security due to digitalized poisoning within GPS positions. The study recommends the anti-radiation integrated system policy with user's security alternative approach to inspire dealing with National Health Policy and Sustainable Development Goals 2030.

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1. Introduction

Diabetes is a non-communicable and simple disease. But its media creates phobia belongs to patient's condition. This disease continues long-term condition with a major impact on the lives and well-being of individuals worldwide [1]. This disease also affects persons of all ages and races [2], which is a leading cause of mortality and reduced life expectancy [3]. It is a deadlier disease than coronavirus disease, with 2.5 million people dying from corona in one year but 4.2 million dying from diabetes [4]. Diabetes is one of the deadliest silent diseases in history with a major consequence on the lives and well-being of individuals, families and societies worldwide. It is among the top 10 causes of death in adults and was estimated to be USD 727 billion for global health diabetes expenditure[4]. The cutting-edge sensor technology affects on augmenting causes of diabetes [5]. Wireless sensor networks have unlocked up new scenarios in healthcare systems [6];[7].This network is actually valuable in several medicare applications, which can be inserted into human body for healthcare services [8];[9];[10];[11]. Sensor networks are planned to fulfill the scarcities like measurement, tracking, detection and data classification [12], particularly the field of non-communicable diseases like diabetes. Flexible and wearable health-monitoring provides a revolutionary technology [13];[14], which serves as an alternative to traditional diagnosis methods, putting healthcare data on a path that is more remote, portable, and timely [15];[16];[17];[18]. These healthcare data can be used by a physician to evaluate body condition like diabetes with an artificial intelligence (AI), internet of everything and deep-learning algorithm [19];[20];[21].

Wireless sensor network has a great advantage on diabetes to identify the classical symptoms of polyuria, polydipsia and polyphagia. Diabetes is a chronic progressive debilitating disease that occurs when the pancreas is not adequately enough able to produce insulin or when the body cannot utilize the insulin that produces inside the human body due to insulin resistance [22];[23];[24]. This disease is a pancreatic disorder, whose prevalence is increasing day by day [25]. The effects of the disease have spread rapidly to the human body from the last 20 to 25 years, which has not increased this much in the history of the world in any other decade. The main reason is the misuse of mobile technology with global positioning systems and global navigation satellite systems. The mobile phone is intimately involved with the body, without which we are not. Many people are suffering from this disease, especially as the frequency of radio frequency is increasing. For example, regular painful conditions in the body - unhealthy eating, western lifestyle [26];[27]. Beyond the effects of diabetes, excessive abuse of radio frequency, abnormal thirst and hunger, sudden urinary pressure and urination immediately become cloudy. The causes of diabetes are:

(i) radio frequency consumption [28];
(ii) obesity [29];
(iii) birth [30];
(iv) genitalia [31];
(v) pancreatic abnormalities [32];[33];
(vi) liver abnormalities [34];[35];
(vii) irregular eating and living conditions [36];[37];

Several researches have summarized the progress of flexible electronic devices and their applications in health-monitoring [38];[39];[40];[41];[42];[43]. Human body with diabetes has an augmented risk of increasing a number of severe health problems [44];[45]. Moreover, people with diabetes have an increased risk of developing a number of serious health problems [46]. Diabetes is a condition that impairs the body's ability to process blood glucose[47]. Consistently high blood glucose levels can lead to a high risk affecting the heart and blood vessels, eyes, kidneys, nerves and teeth [22]. According to WHO [23] that the adults with diabetes have a two to three fold augmented risk of the major cause of heart attack and strokes [48]. Severe acute respiratory syndrome coronavirus infection itself might represent a worsening factor for people with diabetes [49]. According to Health Hub [50], the diabetes is a medical condition in which the blood glucose levels remain persistently higher than normal [51] due to exposing to electromagnetic effluence cause higher plasma glucose level [52].

The study aims to assess the misusing of processed wireless sensor networks towards pancreas within the body boundary and GPS position to identify the individual's frequent urinary infection tends to prone diabetes.

2. Research Methods

2.1 Study Site

The study site is at laboratory and GPS field positions

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of Universiti Malaysia Sarawak (UNIMAS), Malaysia. The GPS positions include longitude, latitude and ellipsoid height in dark and light environments. There are several parameters to collect primary and secondary data from diverse sources including ISNAH Experiment, species selection with body mass index, tracking process in light and dark environment, data compilation and analysis. The method was conducted at as PhD research work from October 2014 to October 2017 at the UNIMAS, Sarawak, Malaysia.

2.2 Sample Size and Study Design

The sample size was 14 individuals among two species viz. cat and dog, showed in Table 1. All specimens were housed in a room with controlled temperature 36.4°C in cat and 36.7°C in dog with breathing rates, respiration, blood pressure and feline body mass index [53].

Table 1. Sample category of cat and dog

Specimens	Feline Body Mass Index (FBMI)		
	Underweight	Normal weight	Overweight & Obesity
Cat	3	1	3
Dog	3	1	3

The experimental design were randomly divided into three experimental groups with Feline Body Mass Index: (i) Underweight, (ii) Normal weight, and (iii) Overweight and Obesity. The study design was linked with different parameters, such as: physical parameters (Table 2), specimen's selection, Impact of Sensor Networks towards Animals and Human beings (ISNAH) experiment, data collection and compilation, data analysis and interpretations. The study design showed different parameters in Figure 1.

Table 2. Sample specimens with physical parameters

Specimens	Physical Parameters				
	FBMI	Breathing rate	Respiration	Temperature	Blood pressure
Cat	24.2 (avg)	210 bpm	per minute 23	36.4°C	121/175 mmHg
Dog	24.7 (avg)	192 bpm	per minute 25	36.7°C	122/180 mmHg

It observed the impact of wireless sensor networks towards pancreases among them in the light and dark environments. The study necessitates an integration of methods used in wireless sensor networks towards animals' body and identified its implication. This envisaged the research taking in matter-of-fact research elements to investigate issue hoisted in the study, primarily targeted at SMART devices like telematics' users towards specimens. Telematics is a smart device, consists of a scanner, Global Positioning System (GPS) and Global Navigation Satellite System (GNSS). The fieldwork conducted in the studied area within January 2015 to January, 2017. The tracking design was shown with different components in Figure 1.

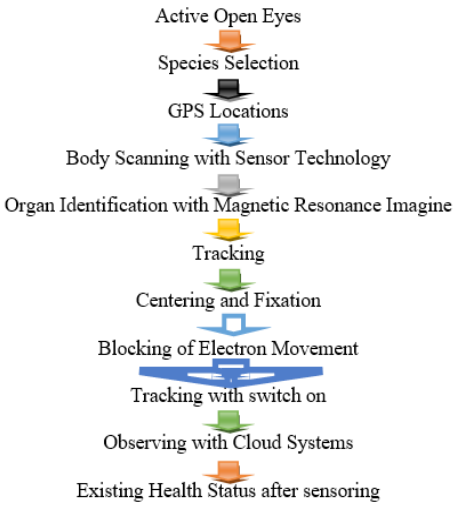

Figure 1. Tracking Design

2.3 Tracking Process

ISNA Experiment implies the experiment on the impact of Sensor Network on Animals (ISNA). The cyber tracker misuses sensor technology to augment non-communicable diseases among animals and human body [54]. The study examined into two specimens, one is dogs and another one is cats among 14 individuals for identification of this misuse application. These animals are available in the study area and suitable for experiment. The study selected sound health two species with Feline Body Mass Index (FBMI), breathing rate, body temperature, respiration and blood pressure measurement in light and dark environment. For the study of FBMI calculation, the study was used web calculator through using rib case circumference and length of the lower back leg from the knee to the ankle [55].

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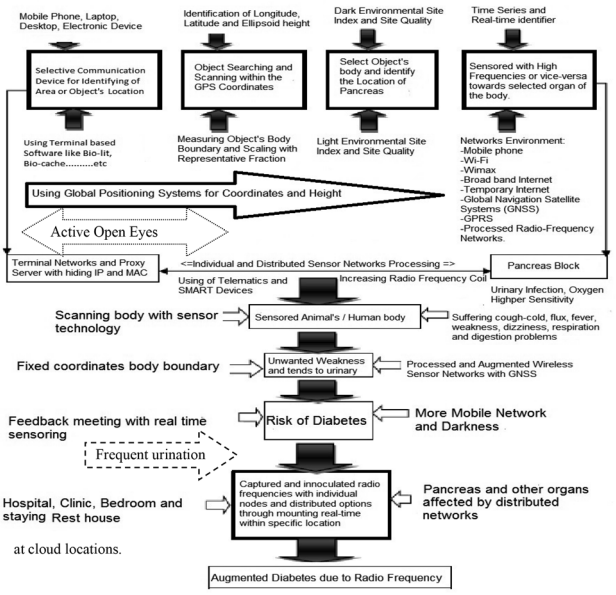

Figure 2. ISNAH Process [5].

The experiment took in dark and light conditions. The specimens stayed in specific geographic location and put the individual inside the iron case (size: 3.5′x 2′x2.5′). Then measurement of individual's coordinates location includes longitude, latitude and ellipsoid height with GPS and GNSS identifiers. From the field observation, the Automated Radio Telemetry System is more effective in dark than light environment. For this purpose, the study has examined the system with on (i) smart cell phone, (ii) telematics device, (iii) iron cage and (iv) individual species separately. The ISNA experiment interlinked with tracking process. This process included several steps which enhanced to fulfill the Sensored observation. The study was observed the physical conditions including non-communicable diseases of animals like diabetes affected by the telematics device through misapplication radio frequency through tracking process as shown in Figure 2. Different stages of Tracking Process of Radio Frequency towards animals are listed as below: (a) Selective communication devices, (b) Searching object and scanning of individuals body organ, (c) Identify body organ and light and dark environment, (d) Sensored the specimens with high, normal and low radio frequency, (e) Observed and compared the specimens status, (f) Feedback meeting and illustrated the consequences at result and discussion.

2.4 Data Accumulation

All primary and secondary bio-sensor data were collected through ISNAH experiments from GPS positions while secondary data were gotten from miscellaneous sources. All accumulated data were assembled with updated software for analysis according to the objectives of the research.

2.5 Data Analysis and Interpretation

The compiled and processed data were involved in the preparation of data master sheet and assimilated into suitable systems used in the results and other segments consecutively. The data were analyzed for presentation and interpretation using standard data analysis software like MS Office Suite 2019, R version 3.4 and SPSS version 26.

All general information regarding the occurrence of specimens, status and affected condition were checked for accuracy from the different sources and sources of information were also verified by the higher authority of University Senate, UNIMAS, Malaysia.

3. Result

The species was identified the fixed location from the combination of retina scanning and GPS sensoring. Then the species was fixed in numbness body from GPS sensor scanning and tracking at pancreas through wireless sensor networks. The study identified species location from sensor device at light and dark environment conditions. Individual's location is recognized with body reflection through sensor technology within GPS coordinates. Using optical distance through processed radio frequency, the sensor device scanned individual's location at species longitude, latitude and ellipsoid heights.

3.1 Pancreas Scanning and Tracking

Due to tracking of processed radio frequency towards pancreas of sensored species in dark and light environments, they felt urination within averages 11 minutes and 18 minutes respectively. When range increasing of processed radio frequency, their urination pressures were also increased and urinated instantly. The experiment observed that the sensor-affected dog and cat felt urinary infections due to dissemination of processed radio frequencies with sensor GPS positions with active eyes within body boundary areas, which as shown in Figure 3. The overweight and obese species suffer in diabetes at more time within dark environment but less in light environment. In the time of medication, the species were altered body temperature and due to pain at sciatica, and blocked pancreas due to fluctuated wireless sensor networks. The findings are also observed from ISNA Experiment that the both species were felt in body complications including: (i) weakness, (ii) sudden weight loss, (iii) reduced nutrition absorbtion, (iv) persistent urinary pain, (v) sudden teeth

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grinding, (vi) frequent comprehensive pressure in micturition.

Once the location of the selected person is determined, his or her entire body is scanned, then the scanned body is sensed to a specific organ (such as the pancreas), then tracked and digitally poisoned at the coordinates point of the GPS location to block blood, air and liquid substances and obstructs the movement of water, air and blood etc. like electrons transmission. The person immediately experiences a urinary tract infection and the urinary comprehensive blood pressure rises, leading to psychological problems such as anxiety and depression. If the person then stays in the designated digital poisoning place, the urinary disorder later turns into diabetes. If the person closes tightly their eyes immediately after feeling a urinary tract infection, wears black sunglasses and dress and quickly moves away, or is placed in another position, the person will not suffer in diabetes. Again, if he/she is suffering from diabetes for any reason, all those involved in its services and treatment, especially doctors, nurses, lab technicians and relatives will wear sunglasses and no one including the patient will be able to keep a mobile phone with everyone. If it is too low, it will have a serious effect on the patient's diabetes. Everyone must be aware of this.

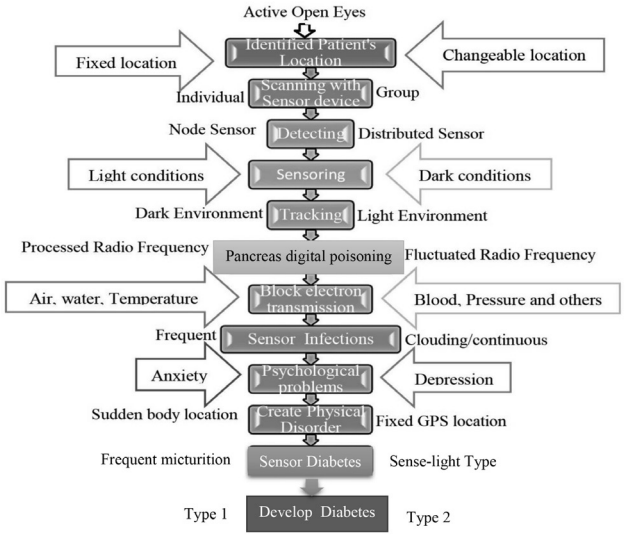

Figure 3. Occurring Sensor Diabetes due to processed wireless sensors

3.2 Light Environment

Individuals suffered in sensor diabetes in light environment, which was observed in cat and dog through the study at longitude, latitude and ellipsoid height within the tracking time. The study illustrated the diabetes occurring period at clouding system, which is indicating the equation through regression analysis. The equation expressed the variable approaches as below:

$$y = -14x^2+54x-25 \quad \text{(i)}$$

$$R^2=1 \quad \text{(ii)}$$

The value 'y' indicates the diabetes occurring period on the pancreas of the species, where the value of 'x' indicates the sensor effect time among underweight, normal and overweight of body mass index at the sufficient light conditions. The (i) equation has stated in the step of R^2 (co-efficient of multiple factor of 1 with standard error of approximation on detected value. The value of R^2 is equivalent to nearly 1, which showed the tracking time was exaggerated towards individual's ampulla of vater in pancreas. So, the definited equation is accepted. The documented equation was formerly active to stirred individual's diabetes responsiveness regarding processed and mixture wireless sensor networks towards underweight, normal weight and overweight individuals. The tracking time also showed the polynomial line in Figure 4. The light environment is suitable for diabetes patients according to polynomian value.

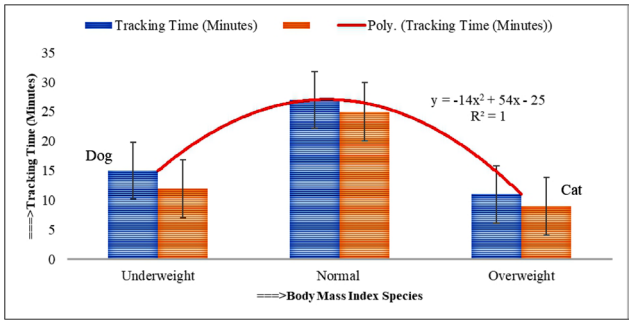

Figure 4. Processed wireless sensor networks tracking time in pancreas of different BMI Individuals at light conditions.

3.3 Dark Environment

From the ISNAH experiment in a dark environment, the study observed that overweight individuals were suffered in diabetes less time. The tracking time was 5 minutes and 7 minutes between cat and dog respectively. But underweight cats affected in diabetes within 6 minutes and dogs in 8 minutes. The normal weight took more time, particularly 12 minutes for cat and 14 minutes for dog, which is shown in Figure 5. The wireless sensor network is prone to active in dark environment towards dog and cat. Here the study stated the tracking method with the following equations as:

$$y = -3.6053x^2+13.342x \quad \text{(i)}$$

$$R^2=0.7778 \quad \text{(ii)}$$

The equations indicate "y" and "x" two variables with

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tracking time towards dog and cat in a dark environment. The individuals were underweight, normal weight and overweight to compare the affected time among them. Equation (i) has an attuned R^2 (co-efficient of multiple determinant of 0.7778 with standard error of estimation on experiential value (Figure 5). The value of R^2 is near to 1, which showed sensored time was affected towards individual's body, specifically in pancreas. So, the definited equation is accepted.

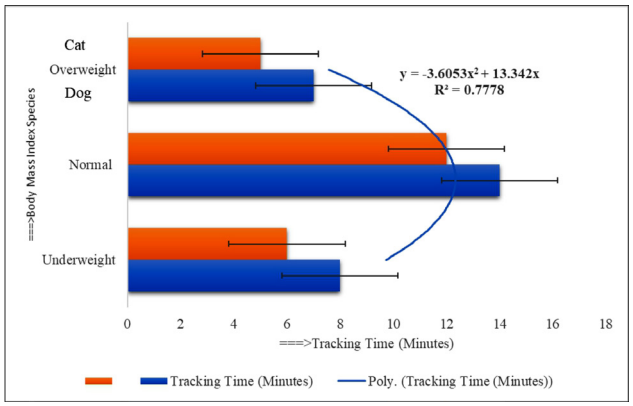

Figure 5. Processed wireless sensor networks tracking time in pancreas of different BMI Individuals at dark environment.

3.4 Occuring Steps of Sensor Diabetes

There are several steps to occur diabetes due to misusing of wireless sensor technology at GPS positions. Firstly, identification of individual's body with GPS, wireless sensor technology and active open eyes. Then the whole body scanning with MRI and GPS Innoculation Sensor and select the pancreas. Again identification the ampulla of vater inside body and blocked its edge with processed radio frequency. As a result, the electron transfer was blocked at pancreas. It obstructs the transmission of bile duct or electron in various parts of the pancreas's body, and impedes the flow of electrons in the body, and it also hampers the optimum growth of insulin in pancreas. When ampulla of vater was blocked by tracking with processed wireless sensor networks within GPS positions, then individual felt uneasy, tiredness, sleepiness, weight loss, weakness and abdominal pain. After certain time, the weak individuals suffer in fluctuating urination within the network boundary of clouding system, which tends to sensor diabetes successively type-1 or type-2 and other problematic functions in pancreas (Figure 6). Again, tracking continues in bladder, she/he suffers frequent comprehensive urination. It is mentioned that ampulla of vater is the 2nd part of duodenum, where pancreatic duct and common bile duct open.

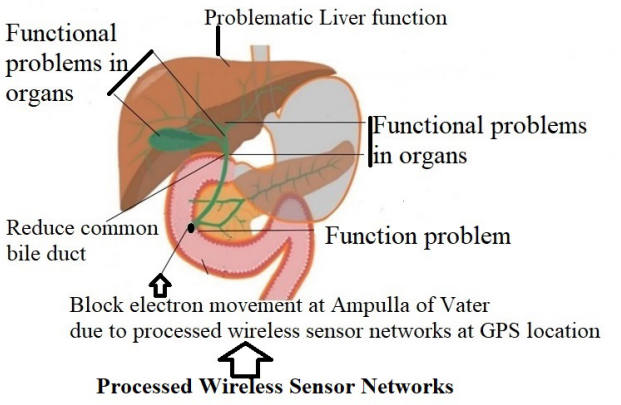

Figure 6. Blocking electron movement at the ampulla of vater with processed wireless sensor networks

Thus, individuals were suffered from symptoms of diabetes, which as shown in Figure 7. In this way, individuals fall ill and tracked several times; eventually expose to die due to processed radio frequencies. Due to wireless sensor tracking, individuals were sick twice times in the light than dark environment. Sensor technology, however, is more sensitive to dark environments than light to make these animals sick. If the time and frequency of the experiment could be increased or doubled, it would have a negative effect on the animals/ human beings.

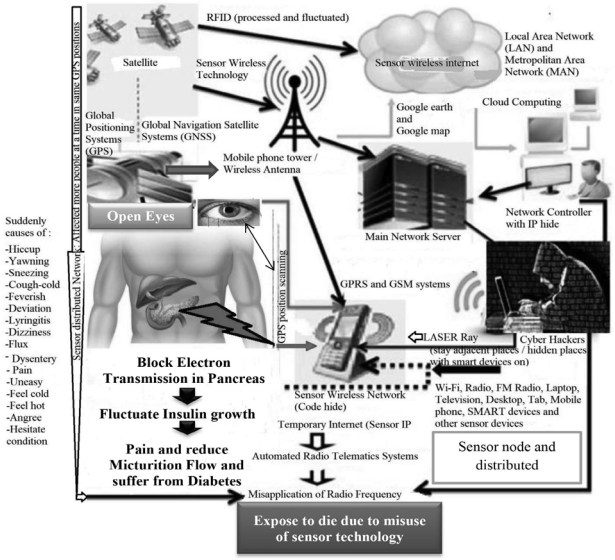

Figure 7. Different Steps to augment Sensor Diabetes due to Wireless Sensor Technology

3.5 Status of Wireless Sensor Network Security

The study continued the collection opinions on the wireless sensor networks security systems stated on participant's perception among three categories including secured security system, restricted location and no

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comment. Approximately 96% of respondents opined for effective secured security systems, 3% restricted location and 1% no comment, which as shown in Figure 8. For sound health and sound minds, the secured wireless sensor networks are essential for the present and upcoming users. Because, we can't move a single moment without WiFi, wireless and mobile phone.The study represents the secure wireless sensor networks for free from different sensor diseases among human beings and animals. The research also illustrates that the secure wireless sensor networks help individual taking effective decision due to free from unwanted tension and sound health network. This sound mind in health connected with neuron networks to help lower blood sugar levels and improves overall glucose tolerance, body's insulin secretion and insulin sensitivity, which can help better control of diabetes.

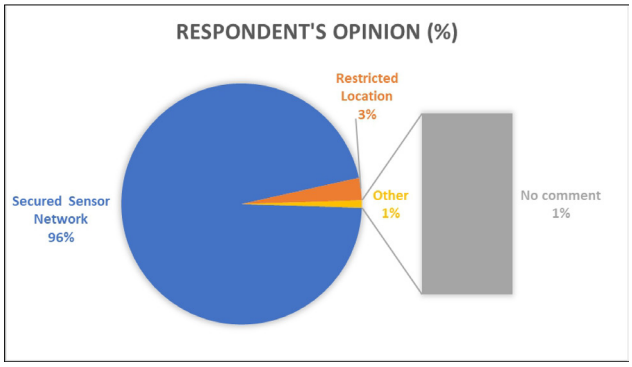

Figure 8. Security perception of wireless sensor network among participants

3.6 Global Diabetes Patients Status

Diabetic patients are increasing every year worldwide due to affecting of processed radio frequency within GPS body boundary. There were about 151 million diabetic patients in the year of 2000, while it was increasing prevelance 463 million in 2019 (Figure 9), which is alarming to all living human beings.

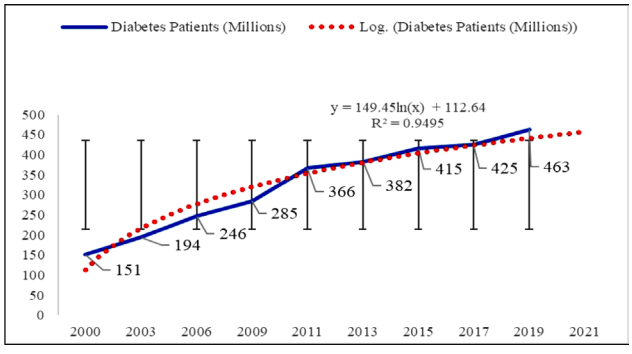

Figure 9. Increase Prevelance of Diabetes Worldwide

Here the study expressed the approach through the following equation,

$$y = 149.45\ln(x) + 112.64 \quad \text{(i)}$$

$$R^2 = 0.9495 \quad \text{(ii)}$$

Where, y is the affected time on sensor users and x is the affected time in diabetes. Sensor users and subscribers increase and diabetes disease also increases in successive year.

Equation (i) has connected with R^2 (co-efficient of multiple determinant of 1 with standard error of estimate on observed mean. The value of R^2 is equivalent to 0.9495, which indicated sensor users/individuals were affected in urinary infection or frequent urination within the stipulated period due to lack of sensor security. So, the stated equation is accepted, which indicated the augmented diabetic patients. The stable equation was then active to stimulate human's diabetes perception regarding processed wireless sensor networks with high frequencies in clouding systems towards, underweight, normal weight and overweight/obese in BMI status. If the value of R^2 is negative, then the approaches were vice versa due to recovery of diabetes.

3.7 Smart Mobile Phone Users

Smart mobile phone users increase in the world due to expansion of wireless sensor technology. In 2015, there were 2.3 billion SP users and 7.1 billion of MP subscribers in the world, but these users and subscribers are increasing 3.2 and 8.3 respectively (Figure 7) unwantedly in 2019 due to cutting-edge technology. Due to lack of effective security, these persons have been surreing in diverse diseases, particularly sensor diabetes during uses of insecure wireless sensor networks.

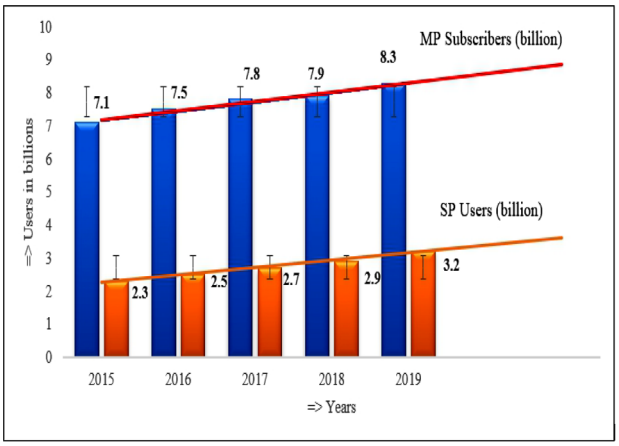

Figure 10. Globally mobile phone users and subscribers from 2015 to 2019.

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4. Discussion

The findings of the study on processed wireless sensor networks towards the ampulla of vater in pancreas cause the frequent urinary infection tends to symptoms with sensor diabetes. The ampulla of vater is purposefully positioned at the flowing together of the pancreatic and common bile ducts, which is the termination and having its own entrance into the duodenum[129];[130];[131];[132]; [135]. This organ position is suitable for blocking with sensor device in active open eyes. The finding symptoms were weight loss, frequent urination, anorexia, tiredness and pain, which are similar with patients in diabetes [131].

The research signifies the sudden comprehensive flow speed of micturition occurred due to tracking of processed wireless sensor networks in active open eyes. From the ISNAH experiment, the study finds that healthy people also suffer from diabetes due to misuse of sensor technology but more risk in patients with overweight and obesity [133];[134]. Therefore, wherever the diabetic patient is located in the world, his GPS location can be known through sensor technology and can be further diseased in various ways, such as: (a) if his eyes are open, (b) if his breathing is in full swing, (c) If he speaks aloud, (d) makes a noise, (e) has a mobile phone with him, (f) has another mobile phone nearby, (g) stays in a designated place for a long time, such as: bedroom, dining room, bathroom, office room or reading room, (h) with GPS device, (i) with sensor device, (j) with CCTV, (k) with Wi-Fi network, (l) electre4ic pole or if the transformer is around, (m) if air is leaked or flatus, (n) if urinal-toilet, (o) if he/she stays in the global navigation satellite system, and (p) if hiccups-sneeze-cough occurs, the current position of the person can be determined, which is shown in Figure 11.

Figure 11. Diabetic Patient identifies through different sensor parameters in GPS location.

4.1 Treatment

Healthy nutrition is an essential component of diabetes management [56]. Diabetes is a debilitating disease that none can treat easily one's at a time due to follow-up sophisticated health maintenance knowledge. Because, diabetes is a minor common problem but someone suffers from this problem, mentally this problem is like a gigantic burden in his thoughts and consciousness. The patient's idea is that he has diabetes, but the disease will never get better. So, he will die in diabetes? But my research says-that person's diabetes will be recovered for a better life. Healthy nutrition is an essential component of diabetes management [56]. It is consequently vital for people with diabetes to eat a diverse and balanced diet to keep their blood glucose levels steady and improve their immune system. Healthy eating, regular exercise, avoiding high calorie foods and smoking, and weight control can help prevent diabetes. If diabetes is not under control, it will be more serious. So, the patient and his family need to be aware to prevent this disease. More than half of individuals with diabetes do not diagnose they have the disease. Experts say that people over the age of 30 are generally at higher risk for developing all types of diabetes due to insulin deficiency. It is possible to prevent such diabetes in 80% of the cases by changing the diet, exercising regularly and careful use of sensor devices [11]. The most urgent awareness for this and doctors, nurses, mobile network companies and telecommunication institutions can play a big role in this work. Specially nurses can make a significant difference in diabetes care if they are proactive [57]. They can teach patients positively how to control their diabetes including blood tests and insulin [58];[59], then diabetes services are likely to change dramatically. There is no substitute for raising awareness if they want to prevent it. If diabetes is a type of sensor technology, its treatment is simple. It is very difficult to get proper treatment due to instant effective initiative. Although various companies and organizations are talking about the discovery of anti-diabetes systems, how effective it will be in curing the disease is a matter of dynamic research. The research has shown that 80% of the disease needs to be treated through psychological and 20% with physical therapy and medicine [11].

Moreover, the advice of a doctor experienced in medical sensors can be taken in this regard to enhancement the field of non-communicable disease care. If a person lives in a remote area where there is no regular registered doctor, he follows the open-close-eyes treatment rules as an alternative arrangement [60]. Moreover, the advice of an experienced doctor in medical censorship can also be taken in this regard. The whole world today is worried about the treatment of diabetes. Therefore, with the joint efforts of doctors, nurses, administration and the general public, we need to move fast to recover from this disease. Therefore,

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the following rules will help to recover of sensor diabetes. The rules are: (a). if a person suddenly suffers frequent urination, hiccup, cyanosis, runny nose, flatus, chills, headache, discomfort, micturition or gasps after being in a certain place, immediately closes his eyes tightly, wears sunglasses (anti-radiation glass) and quickly changes his existing place to a new place. This must do and no mobile phone beside him/her, (b). if individuals feel sick or gruesome, he/she must change the position of the bed or GPS positions from time to time and be very cautious using the smartphone or sensor device for good health. If you do not recover, consult an expert endocrinologist instantly, (c) no other religious activities or entertainment through sensor devices without personal area network control unit. These can be functioned or heard by placing a mobile phone 6 feet away from the boundary of individual's location and be ensured wearing sunglasses. Therefore, mobile phones cannot be used in clouding systems, particularly in religious places, temples, schoolrooms, laboratories, conference rooms, etc., and system security and institutional network control units must be used in these places. Diabetes treatment has suffered dramatic deviations throughout time that can be attributed to breakthroughs in cutting-edge-technology [61]. Various treatment types are patients with diabetes in light and dark environment, but light environment is suitable for adult patients [62]. These treatments include:

(i) open-closed eyes treatment [60],
(ii) technological treatment [63],
(iii) psychological treatment [64],
(iv) physical mentoring-administrative treatment [65],
(v) herbal treatment [66],
(vi) ethical treatment [67];[68],
(vii) environmental treatment [69];[70],
(viii) nutrtional treatment [71];[72];[73];[74],
(ix) yoga treatment [75];[76];[77];[78],
(x) medical treatment [79].

The physicians assist the patients in diabetes treatment options that are appropriate for individuals through the above mentioned rules. The serious patient in diabetes is essential alternative health experts for dynamic treatment team including health scientist, foot doctor, nutritionist, eye specialist and health sensor technologists. Because,due to augmenting causes of sensor diabetes occur in a clouding system according to your movement all day long with is a significant step for the primary disease diagnosis, treatment, and management [80];[81];[82];[83];[84];[85];[86]. Overall, the individual can follow the open-close-eyes treatment systems, which are shown in Figure 12. This system is easy and profitable for effective treatment except physicians.

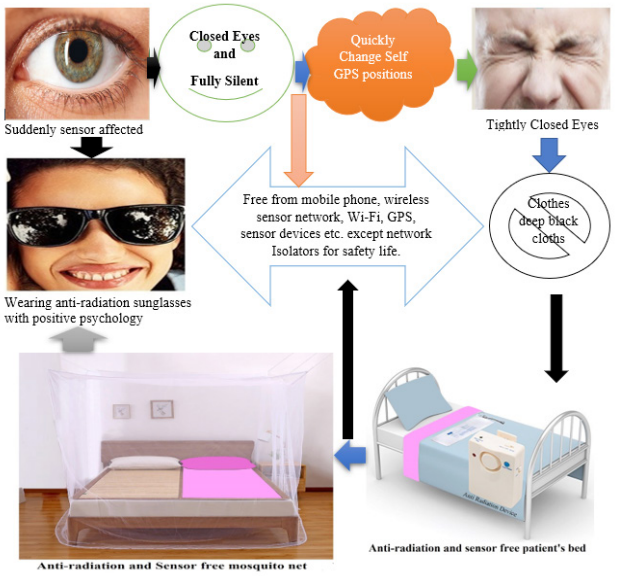

Figure 12. Open-Closed Eyes Treatment System

4.2 Alarming of Augmenting Sensor Diabetes

Wherever you are alive in the world, your diabetes can increase through the misuse of GPS sensor technology through inoculation of sensor particles. Because GPS sensor tracks inside the body [87]. Your position is known through different organs. Many of us are not aware of this. Because, many of us do not know about the effect of radio frequency. These waves do us both good and bad, within certain ranges. Because our body produces certain waves, our body has normal frequency for urination. However, if the amplitude or fluctuated or processed of these waves is different, it has a negative effect on our body. Suppose individuals are staying in the bedroom now (GPS location A), then he/she is going to Amber Khana (GPS location B), from there to Dargah Gate (GPS location C), then to Zindabazar (GPS location D) and finally to Bandarbazar office (destination place) in Sylhet (GPS location-identified with processed frequency), Bangladesh, which as shown in Figure 13. Because individuals have a mobile phone with insecure network, individual's location in these places is known through network graphs. Besides, they have a mobile phone and open active eyes. On the other hand, Cyber hackers have tracking switch-on in clouding systems at GPS and GNSS locations. In these five places affected persons can feel the urination. There are at least five people in these places who abuse radio waves to humans through telematics. So, change the current position quickly from wherever individuals feel like urinating. In this case, individuals do not think that they have diabetes. This has been the effect of applying additional radio frequencies. If we don't have radio frequency in our body,

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we will not urinate. But processed and fluctuated frequencies enhance frequent urination, after certain time it tends to diabetes. We need to urinate because radio frequency is generated, but in the hereafter the radio frequency of the people of Paradise will not be generated, so they will not have it. This is the blessing of Allah (God). And in the life of the world, cyber hackers are involved in these misdeeds. From the study, it is alarming to all for augmenting sensor diabetes due to misusing of cloud sensor technology, which as shown in Figure 13.

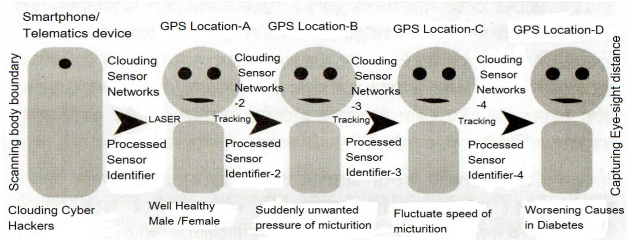

Figure 13. Flow diagram of augmenting diabetes due to misusing of sensor technology within body boundary area

Diabetes is one of the highest wide-reaching public health problems, which can be managed and prevented by dietary factors, insulin therapy and positive psychological catalists for protection of central nervous systems [88];[89];[90];[91];[92];[93];[94]. However, individuals can control the diabetic complications with medication and daily lifestyle changes due to controlling personal wireless network zone [95]. Despite the challenges of cutting edge sensor technology and nutritional research can be helpful to clinicians, patients, and the public [96]. Overall, augmenting consciousness among people for early diagnosis and treatment can recover long-term diabetes [97]. Adult individuals with pre-existing health conditions with diabetes, cardiac arrest, chronic kidney disease and acute respiratory distress syndrome (ARDS) etc. CASID [60] appear to be more susceptible to becoming severely sick with the Coronavirus. When individuals with diabetes affect a common acute sensor infection and disorder (CASID), it can be more difficult to recover due to uncertainties in blood glucose stages [98] and conceivably the complications of existing diabetes.

4.3 Diabetes with Mental Pollution

Diabetes connects with mental pollution of patients inducing with a thought, critical remark, accusation, visual image, insult, memory [99] disseminated from processed sensor technology. It is exposed to change by several psychological progressions linking with neuroscience [100];[101];[102]. Mental pollution increases in the risk of individual's health complications with diabetes due to presence of wildfire smoke [103];[104]. With the cutting edge sensor technology, people are directly affected to mental pollution with diverse elements of environment to influence diabetes within GPS location [105];[106];[107]. Everyone uses mobile phone, but none can be aware fully its environmental exposures to mental health, which associated to diabetes that have reliably revealed to associate with insulin resistance [108];[109];[110]. Because, insulin resistance is closely related to human health. On the other hand, air pollution is an important global health problem [111];[112], which is increasingly in focus for diabetes epidemiology [113];[114]. Diabetes is a chronic disease that reduces the hormone insulin leading to high blood sugar levels in presence of mental pollution in an unwanted environmental consequences.

4.4 Diabetes in Chief Executives

According to sensor clouding systems, the study stated that any person will be affected in health problems by cyber hackers through misusing of processed wireless sensor technology [60]. For example, President, Prime Minister, Chief Justice, Chief of Army, Inspector General of Police, Vice Chancellor, Chairman, Managing Director, Professor, Principal, Manager, Scientist, Expert, Specislist and or Senior Executives presides the leader in his/her office regularly within a GPS location. When he/she is ready to sign for providing decision or judgement or speech delivery with active open eyes to the audience. As audience, nearby cyber hackers track at his/her bladder. Then he/she suddenly feels uneasy with frequent urination. If he/she changes location instantly to control the unwanted urination. Otherwise, he/she fixes in GPS positions with comprehensive urination feelings, so he/she urinates in his /her chair or sitting place/bed. It is mentioned that the Chief Executives have sufficient security forces, but lack of dynamic sensor security in GPS and GNSS positions, he/she is weak easily through misusing of wireless sensor. Afterward, cyber hackers expose to the media as he/she (Prime Minister / Chief Justice) suffers in diabetes. General public health is in jeopardy due to misuse of advanced sensor technology. Actually, he/she was not suffered in diabetes, but the switch-on of cloud sensor device was active at processed wireless sensor networks. Cyber hackers monitor chief executives and general people with GPS sensor camera due to their open active eyes, making a noise or other voices at dark and light environment, then they select the targeted executive at GPS position for tracking with diabetes or other sensor diseases like CASID.

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4.5 Risks

Frequent urination is a sign of diabetes, which occurs in tracking processed sensor networks [115]. Impact of processed radio frequency is a prime concern to sensor network threats in frequent urination within GPS positions [116]. In-body GPS systems with magnetic resonance imaging (MRI) scans reflect radio signals of the patient [87], which is risky in unrestricted nano-sensor signals. Besides, intrusion detection systems devised for wireless sensor networks [117] with sensor and medical data, which obscures the existing security challenges [118]. Misuse of active eye-sight is also risk due to cutting-edge sensor technology [60]. Devotion to most diets in the longer term for patient is an important challenge [119]. Diabetes research in uncertainty and controversy remains in sudden complications [96], though the proportion of adults with diabetes augmented with age [124]. The vital security encounters in locked health data gathering are confidentiality and reliability of DNA sequencing data for sensor diabetes management. Major risk is misuse of false interface on diabetes test report and media exposure as an infodemic with phobia statement debilitating negative psychological approach towards patients during movement at clouding networks[120];[121];[122];[123];[136]. Cutting edge health sensor technologies can educate patients about diabetes on self-management and awareness [125];[126]. On the other hand, due to initial identification and consequent growing of diabetes are challenges for global healthcare systems [127;128]. Overall, processed wireless sensor networks including clouding systems are at risk for global public health security.

5. Conclusions

From the study, diabetes is indeed measured and cured due to controlling individual's body boundary area. The research has shown the impact of processed wireless sensor networks towards the ampulla of vater for being causes of sensor diabetes. The recovery of diabetes delays to the patients in overweight and obesity in dark environment than other environmental conditions. It is consequently vital for individuals with sensor diabetes to take a specific miscellaneous and balanced diet keeping their blood glucose levels steady for improvement of immune systems. Moreover, human body is in risks due to misapplication of wireless sensor networks with active open eyes in GPS positions. Finally, the study suggests that individuals must use personal area network control units within GPS location and wear sunglasses with tightly closed eyes and black cloths till to recover.

Declarations

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Data Availability

The data are being used to support the findings of this research work are available from the corresponding author upon request.

Competing Interests

The authors declare no potential conflict of interests in this research work.

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Authors Contributions

MRM designed the study. MRM wrote the first draft of the manuscript with MAH, ASR, MSK, MMH, ITR, MSH, CSS, MBU, MTHT, MSA, SIH, AAS, SHC and AKS all co-authors reviewing and amending the initial draft. All authors read and approved the final version of the manuscript.

References

[1] Saeedi, P., Petersohn, I., Salpea, P., Malanda, B., Karuranga, S., Unwin, N., Colagiuri, S., Guariguata, L., Motala, A.A., Ogurtsova, K., Shaw, J.E., Brighth, D., Williams. R. and IDF Diabetes Atlas Committee. (2019). Global and regional diabetes prevalence estimates for 2019 and projections for

2030 and 2045: Results from the International Diabetes Federation Diabetes Atlas, 9thedition. Diabetes Research and Clinical Practice,157, 107843, 1-10.
DOI: https://doi.org/10.1016/j.diabres.2019.107843.

[2] Narayan, K.M.V., Zhang, P., Kanaya, A.M., Williams, D.E., Engelgau, M.M., Imperatore, G. and Ramachandran, A. (2006). Disease Control Priorities in Developing Countries. 2nd edition. Jamison DT, Breman JG, Measham AR, et al. [eds]. Chapter 30Diabetes: The Pandemic and Potential Solutions. NCBI. 1-20. URL: https://www.ncbi.nlm.nih.gov/books/NBK11777/.

[3] Lin, X., Xu, Y., Pan, X., Xu, J., Ding, Y., Sun, X., Song, X., Ren, Y. and Shan, P.F. (2020). Global, regional, and national burden and trend of diabetes in 195 countries and territories: an analysis from 1990 to 2025. Scientific Report, 10, 14790.
DOI: https://doi.org/10.1038/s41598-020-71908-9.

[4] IDF. (2020). Diabetes facts & figures. International Diabetes Federation (IDF), Belgium. URL: https://www.idf.org/aboutdiabetes/what-is-diabetes/facts-figures.html (Accessed time on January 19, 2021 at 12:00 pm).

[5] Miah M.R., Khan,M. S., Rahman, A.A.M.S., Samdany, A.A., Hannan, M.A., Chowdhury, S.H., Sayok, A.K. (2020). Impact of Sensor Networks towards Individuals Augmenting Causes of Diabetes. International Journal of Diabetes Research, 9(2),1-10. DOI: 10.5923/j.diabetes.20200902.

[6] Padmapriya, S., Chowdary, V.A. and Dinesh, V.S. (2013). Wireless sensor networks to monitor Glucose level in blood. International Journal of Advancements in Research & Technology, 2(4): 322–326. URL: http://www.ijoart.org/docs/Wireless-sensor-networks-to-monitor-Glucose-level-in-blood.pdf

[7] Miah, M.R., Rahman, A.A.M.S., Khan, M.S., Samdany, A.A., Hannan, M.A., Chowdhury, S.H., Sayok, A.K. (2020a). Impact of Sensor Technology Enhancing Corona Disease. American Journal of Biomedical Engineering, 10 (1), 1-11. DOI:10.5923/j.ajbe.20201002.

[8] Chaudhary, D. and Waghmare, L.M. (2014). Design Challenges of Wireless Sensor Networks and Impact on Healthcare Applications. International Journal of Latest Research in Science and Technology, 3(2):110–114.

[9] Abidi, B., Jilbab, A., and Haziti, M.E.L. (2016). Wireless Sensor Networks in biomedical: wireless body area networks. In: Procedings of the Europe, Middle East and North Africa Conference on Technology and Security to support Learning. EMENA-TSSL, SaidaOujda, Morocco, 3–5.

[10] Wu, F., Xu, L., and Kumari, S. (2017). An Improved and Anonymous two factor authentication protocol for healthcare applications with wireless medical sensor networks. MultimedSyst, 23 (2), 195–205.
DOI: https://doi.org/10.1007/s00530-015-0476-3

[11] Miah, M.R., Rahman, A.A.M.S., Samdany, A.A. and Chowdhury, S.H. (2021). A Dynamic Scientific Model for Recovery of Corona Disease. Frontiers in Science, 11(1), 1-17.
DOI: 10.5923/j.fs.20211101.01, URL: http://article.sapub.org/10.5923.j.fs.20211101.01.html.

[12] Khan, R.I. and Pathan, A.S. (2018). The state-of-the-art wireless body area sensor networks: A survey. International Journal of Distributed Sensor Networks, 14(4):1–16.
DOI: 10.1177/1550147718768994.

[13] Ding, S. and Schumacher, M. (2016). Sensor Monitoring of Physical Activity to Improve Glucose Management in Diabetic Patients: A Review. Sensors, 16, 589: 1–13.
DOI:10.3390/s16040589.

[14] Li, T., Li, Y. and Zhang, T. (2019). Materials, structures, and functions for flexible and stretchable biomimetic sensors. Accounts of Chemical Research, 52(2):288–296.
DOI:10.1021/acs.accounts.

[15] Kim, D. H., Lu, N., Ma, R., Kim, Y. S., Kim, R. H., Wang, S., Wu, J., Won, S. M., Tao, H., Islam, A., Yu, K. J., Kim, T. I., Chowdhury, R., Ying, M., Xu, L., Li, M., Chung, H. J., Keum, H., McCormick, M., Liu, P., Zhang, Y. W., Omenetto, F. G., Huang, Y., Coleman, T. and Rogers, J. A. (2011). Epidermal electronics. Science, 333(6044): 838–843.
DOI:10.1126/science.1206157.

[16] Gao, W., Emaminejad, S., Nyein, H. Y. Y., Challa, S., Chen, K., Peck, A., Fahad, H. M., Ota, H., Shiraki, H., Kiriya, D., Lien, D. H., Brooks, G. A., Davis, R. W. and Javey, A. (2016). Fully integrated wearable sensor arrays for multiplexed in situ perspiration analysis. Nature, 529(7587): 509–514.
DOI:10.1038/nature16521.

[17] Wang, X. W., Gu, Y., Xiong, Z. P., Cui, Z. and Zhang, T. (2014). Electronic skin: silk-molded flexible, ultrasensitive, and highly stable electronic skin for monitoring human physiological signals. Advanced Materials, 26(9): 1309.
DOI:10.1002/adma.201470054.

[18] Sheridan C. (2014). Apple moves on health, drug developers shift into smart gear. Nature Biotechnology, 32(10): 965–966. DOI:10.1038/nbt1014-965a.

DOI: https://doi.org/10.30564/jer.v3i1.2826

[19] Zang, Y. P., Zhang, F. J., Di, C. A. and Zhu, D. B. (2015). Advances of flexible pressure sensors toward artificial intelligence and health care applications. Materials Horizons, 2(2):140–156. DOI:10.1039/c4mh00147h.

[20] Zhao, W. X., Bhushan, A., Santamaria, A., Simon, M. and Davis, C.(2008). Machine learning: A crucial tool for sensor design. Algorithms,1(2): 130–152.
DOI:10.3390/a1020130.

[21] Vu, C. and Kim, J. (2018). Human motion recognition by textile sensors based on machine learning algorithms. Sensors, 18(9): 3109.
DOI:10.3390/s18093109.

[22] IDF (2019). What is Diabetes? About Diabetes.International Diabetes Federation, Brussels, Belgium. URL:https://www.idf.org/aboutdiabetes/what-is-diabetes.html?gcid=EAIaIQobChMInML08.001.8b00497.

[23] WHO.(2018). Key Facts.Diabetes.url: https://www.who.int/news-room/fact-sheets/detail/diabetes (Accessed time on March 16, 2021 at 9:00 am)

[24] Mazid, M.A. (2019, Nov14.). Global Economic Impact of Diabetes. The Daily Asian Age, Dhaka, Bangladesh. url: https://dailyasianage.com/news/204986/global-economic-impact-of-diabetes (Accessed time on March 13, 2021 at 9:00 am)

[25] Murray, C.J.L. and Lopez, A.D.(eds.). (1996). The Global Burden of Disease: A Comprehensive Assessment of Mortality and Disability from Diseases, Injuries, and Risk Factors in 1990 and Projected to 2020. The Harvard School of Public Health on behalf of the World Health Organization and World Bank and distributed by Harvard University Press. 1–43. URL:

[26] Centers for Disease Control and Prevention. (2011). National diabetes fact sheet: national estimates and general information on diabetes and pre-diabetes in the United States, Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, 2011, Atlanta, GA, U.S.1-12. URL:http://www.diabetesincontrol.com/wp-content/uploads/PDF/ndep_diabetes_facts_2011.pdf (Accessed time on March 16, 2021 at 11:00 am).

[27] Deedwania, P. C. and Fonseca, V. A. (2005). Diabetes, prediabetes, and cardiovascular risk: shifting the paradigm. The American journal of medicine, 118: 939–947. DOI: 10.1016/j.amjmed.2005.05.018

[28] Meo, S., Alsubaie, Y., Almubarak, Z., Almutawa, H., AlQasem, Y. and Hasanato, R. (2015). Association of Exposure to Radio-Frequency Electromagnetic Field Radiation (RF-EMFR) Generated by Mobile Phone Base Stations with Glycated Hemoglobin (HbA1c) and Risk of Type 2 Diabetes Mellitus. International Journal of Environmental Research and Public Health, 12(11),14519–14528.
DOI:10.3390/ijerph121114519.

[29] Algoblan, A., Alalfi, M., & Khan, M. (2014). Mechanism linking diabetes mellitus and obesity. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy, 587.
DOI:10.2147/dmso.s67400.

[30] Bonsembiante B., Dalfrà, M.G., Masin, M., Gallo, A. and Lapolla. A., (2013). Adult-Onset Type 1 Diabetes and Pregnancy: Three Case Reports. Case Reports in Medicine, 1-3.
DOI: http://dx.doi.org/10.1155/2013/920861.

[31] Geerlings, S., Fonseca, V., Castro-Diaz, D., List, J. and Parikh, S. (2014). Genital and urinary tract infections in diabetes: Impact of pharmacologically-induced glucosuria. Diabetes Research and Clinical Practice, 103(3), 373–381.
DOI: 10.1016/j.diabres.2013.12.052.

[32] Sjoberg, R. J. and Kidd, G. S. (1989). Pancreatic Diabetes Mellitus. Diabetes Care, 12(10), 715–724.
DOI:10.2337/diacare.12.10.715.

[33] Meier, J. J. and Giese, A. (2015). Diabetes associated with pancreatic diseases. Current Opinion in Gastroenterology, 31(5), 400–406.
DOI:10.1097/mog.0000000000000199.

[34] Tolman, K. G., Fonseca, V., Dalpiaz, A. and Tan, M. H. (2007). Spectrum of Liver Disease in Type 2 Diabetes and Management of Patients with Diabetes and Liver Disease. Diabetes Care, 30(3), 734–743.
DOI:10.2337/dc06-1539.

[35] Blendea, M. C., Thompson, M. J. and Malkani, S. (2010). Diabetes and Chronic Liver Disease: Etiology and Pitfalls in Monitoring. Clinical Diabetes, 28(4), 139–144.
DOI:10.2337/diaclin.28.4.139.

[36] Sami, W., Ansari, T., Butt, N. S. and Hamid, M. (2017). Effect of diet on type 2 diabetes mellitus: A review. International journal of health sciences, 11(2), 65–71. PMID: 28539866.

[37] ADA (American Diabetes Association). (2003a). Nutrition Principles and Recommendations in Diabetes. Diabetes Care, 27(Supplement 1), S36–S36.
DOI:10.2337/diacare.27.2007.s36.

[38] Takei, K., Honda, W., Harada, S., Arie, T. and Akita S. (2015). Toward flexible and wearable human-interactive health-monitoring devices. Advanced Healthcare Materials, 4(4): 487–500.
DOI:10.1002/adhm.201400546.

[39] Knop, F.K., Vilsboll, T., Hojberg, P.V., Larsen, S., Madsbad, S., Vølund, A., Holst, J.J. and Krarup, T. (2007). Reduced incretin effect in type 2 diabetes: cause or consequence of the diabetic state? Diabetes, 56:1951–1959.
DOI: 10.2337/db07-0100.

[40] Lou, Z., Wang, L. L. and Shen, G. Z. (2018). Recent advances in smart wearable sensing systems. Advanced Materials Technologies, 3(12): 1800444.
DOI:10.1002/admt.201800444.

[41] Khan, Y., OstfeldA, E., Lochner, C. M. and Pierre, A. A. C. (2016). Monitoring of Vital Signs with Flexible and Wearable Medical Devices. Advanced Materials, 28(22): 4373–4395.
DOI:10.1002/adma.201504366.

[42] Zhang, T., Bai, Y.Y. and Sun, F. Q. (2018). Recent advances in flexible self-healing materials and sensors. ScientiaSinicaInformationis, 48(6): 650–669.
DOI:10.1360/n112018-00117.

[43] Li, Y., Zheng, L. and Wang, X. (2019). Flexible and wearable healthcare sensors for visual reality healthmonitoring. Virtual Reality & Intelligent Hardware, 1(4):411—427.
DOI: 10.1016/j.vrih.2019.

[44] Peiris, V. (2013). Highly integrated wireless sensing for body area network applications. The International Society for Optics and Photonics. SPIENewsroom.
DOI:10.1117/2.1201312.005120.

[45] O'Donovan, T., O'Donoghue, J., Sreenan, C., Sammon, D., O'Reilly, P. and O'Connor, K.A. (2009). A Context Aware Wireless Body Area Network. Pervasive Computing Technologies for Healthcare. 1–2,
DOI:10.4108/ICST.PERVASIVEHEALTH2009.5987.

[46] Bilal, M and Kang, S.G.(2017).An Authentication Protocol for Future Sensor Networks. Sensors, 17(5): 979.
DOI:10.3390/s170509.79.

[47] Nall, R. (2018). An overview of diabetes types and treatments.Newsletter on Health. Medical News Today,1(1): 1–5. URL: https://www.medicalnewstoday.com/articles/323627.

[48] Goharimanesh, M., Lashkaripour, A. and Akbari, A. (2015). A Comparison of Fuzzy Types 1 and 2 in Diabetics Control, Based on Augmented Minimal Model. Journal of World's Electrical Engineering and Technology, 4(2): 70–75.
DOI/URL: https://profdoc.um.ac.ir/articles/a/1053908.pdf.

[49] Apicella, M., Campopiano, M.C., Mantuano, M., Mazoni, L., Coppelli, A., Prato, S.D. (2020). COVID-19 in people with diabetes: understanding the reasons for worse outcomes. The LANCET Diabetes and Endocrinology, 8 (9), 782-792.
DOI: https://doi.org/10.1016/S2213-8587(20)30238-2.

[50] Health Hub. (2021). Diabetes Mellitus, Health Hub, Singapore. URL: https://www.healthhub.sg/a-z/diseases-and-conditions/102/topics_diabetes (Accessed time on January18, 2021 at 9:00 am).

[51] Cryer, P.E., Davis, S.N. and Shamoon, H. (2003). Hypoglycemia in diabetes. Diabetes Care, 26:1902–1912.
DOI: https://doi.org/10.2337/diacare.26.6.1902.

[52] Havas, M. (2008). Dirty electricity elevates blood sugar among electrically sensitive diabetics and may explain brittle diabetes. Electromagn. Biol. Med., 27, 135–146.
DOI: 10.1080/15368370802072075.

[53] Sha, H., Zeng, H., Zhao, J. and Jin, H. (2019). Mangiferin ameliorates gestational diabetes mellitus-induced placental oxidative stress, inflammation and endoplasmic reticulum stress and improves fetal outcomes in mice. European Journal of Pharmacology, 859: 172522.
DOI:10.1016/j.ejphar.2019.172522.

[54] Kays, R., Tilak, S., Crofoot, M., Fountain, T., Obando, D., Ortega, A., Kuemmeth, F., Mandel, J., Swenson, G., Lambert, T., Hirsch, B. and Wikelski, M. (2011). Tracking Animal Location and Activity with an Automated Radio Telemetry System in a Tropical Rainforest. Published by Oxford University Press on behalf of the British Computer Society. The Computer Journal, 1(1): 1–18,
DOI: 10.1093/comjnl/bxr072.

[55] Waltham. (2017). Feline Body Mass Index (FBMI). Waltham FBMI Calculator. 1–2. URL: https://js-calc.z6_io/calc/hORP8x2bWjQU7qxq (Accessed time on March 16, 2017 at 9:00 am)

[56] IDF. (2020a). COVID-19 and diabetes. IDF, Belgium. URL: https://www.idf.org/aboutdiabetes/what-is-diabetes/covid-19-and-diabetes/1-covid-19-and-diabetes.html (Accessed time on January 19, 2021 at 1:00 pm).

[57] Glasgow, R.E. (1995). A Practical Model of Diabetes Management and Education. DiabetesCare, 18(1): 117–126.

[58] Frier, B.M. (2014). Hypoglycaemia in diabetes mellitus: Epidemiology and clinical implications. Nat. Rev. Endocrinol.,10: 711–722.
DOI: 10.1038/nrendo.2014.170.

[59] Burge, M.R., Mitchell, S., Sawyer, A.,Schade, D.S.(2008). Continuous glucose monitoring: the future of diabetes management. Diabetes Spectr.,21:

DOI: https://doi.org/10.30564/jer.v3i1.2826

112–119.
DOI: https://doi.org/10.2337/diaspect.21.2.112.

[60] Miah, M.R., Rahman, A.A.M.S., Khan, M.S., Hannan, M.A., Hossain, M.S., Shahriar, C.S., Hossain, S.A.M.I., Talukdar, M.T.H., Samdany, A.A., Alam, M.S., Uddin, M.B., Sayok, A.K., Chowdhury, S.H. (2021a). Effect of Coronavirus Worldwide through Misusing of Wireless Sensor Networks. American Journal of Bioinformatics Research, 11(1), 1-31. DOI: 10.5923/j.bioinformatics.20211101.01 (URL: http://article.sapub.org/10.5923.j.bioinformatics.20211101.01.html).

[61] Marcus, A.O. (2002). Outpatient Technologies for the treatment and prevention of Diabetes. Diabetes Spectrum, 15(2), 78-80.
DOI: 10.2337.

[62] Khan Y, Han D, Pierre A, Ting J, Wang X C, Lochner C M, Bovo G, Yaacobi-Gross N, Newsome C, Wilson R, Arias A C. (2018). A flexible organic reflectance oximeter array. Proceedings of the National Academy of Sciences, 115(47): E11015–E11024. DOI:10.1073/pnas.1813053115.

[63] Schiel, R., Bambauer, R. and Steveling, A. (2018). Technology in Diabetes Treatment: Update and Future. Artificial Organs, 42 (11), 1017–1027.
DOI/URL: https://doi.org/10.1111/aor.13296.

[64] Delamater,A. M., Jacobson,A. M., Anderson, B., Cox,D., Fisher,L.,Lustman, P., Rubin, R.and Wysocki, T. (2001). Psychosocial Therapies in Diabetes: Report of the Psychosocial Therapies Working Group. Diabetes Care, 24(7): 1286-1292.
DOI: https://doi.org/10.2337/diacare.24.7.1286.

[65] ADA (). (2003). Physical Activity/Exercise and Diabetes Mellitus. American Diabetes Association (ADA) Diabetes Care, suppl 1: s73-s77.
DOI/URL: https://doi.org/10.2337/diacare.26.2007.S73.

[66] Moradi, B., Abbaszadeh, S., Shahsavari, S., Alizadeh,M. and Beyranvand, F. (2018). The most useful medicinal herbs to treat diabetes. Biomedical Research and Therapy, 5(8): 2538–2551.

[67] Azizi, F., Hatami, H. and Janghorbani, M. (2007). Epidemiology and Control of Common Disease in Iran.Tehran: Eshtiagh Press, 1–5.

[68] Gupta, V.K., Gupta, M., and Arora.S. (2017). Diabetes: Ethical Issues. Chapter 159, Medicine Update, India. 742-745. URL: http://www.apiindia.org/pdf/medicine_update_2017/mu_159.pdf. (Accessed time on March 16, 2020 at 9:00 am)

[69] Dazzi, D., Taddei, F., Gavarini, E A., Negro, U.R. and Pezzarossa, A. (2001). The control of blood glucose in the critical diabetic patient: a neuro-fuzzy method. Journal of Diabetes and its Complications, 15: 80–87.
DOI: 10.1016/s1056-8727(00)00137-9.

[70] Grant, P. (2007). A new approach to diabetic control: fuzzy logic and insulin pump technology. Medical engineering & physics, 29: 824–827.
DOI: 10.1016/j.medengphy.2006.08.014.

[71] Forouhi, N.G., Misra, A., Mohan,V., Taylor, R. and Yancy., W. (2018). Dietary and nutritional approaches for prevention and management of type 2 diabetes. BMJ, 361:k2234,1–9.
DOI: 10.1136/bmj.k2234.

[72] IDF (International Diabetes Federation). (2017). Diabetes atlas. 8th ed. IDF, 2017. URL: ww.diabetesatlas.org (Accessed time on March 15, 2020at 9:00 am). URL: https://www.diabetesatlas.org/upload/resources/previous/files/8/IDF_DA_8e-EN-final.pdf.

[73] Johnston, B.C., Kanters, S., Bandayrel, K. Wu, P., Naji, F., Siemieniuk, R.A., Ball, G.D.C., Busse, J.W., Thorlund, K., Guyatt, G., Jansen, J.P. and Mills, E.J. (2014). Comparison of weight loss among named diet programs in overweight and obese adults: a meta-analysis. JAMA, 312(9):923-33.
DOI:10.1001/jama.2014.10397.

[74] Westman, E.C., Yancy, W.S. Jr. and Humphreys, M. (2006). Dietary treatment of diabetes mellitus in the pre-insulin era(1914-1922). PerspectBiol Med,49:77-83.
DOI:10.1353/pbm.2006.0017.

[75] Cronkleton, E. (2018). Yoga for Diabetes. Healthline. URL: https://www.healthline.com/health/diabetes/yoga-for-diabetes (Accessed time on March 15, 2021 at 2:00 pm).

[76] Raveendran, A. V., Deshpandae, A. and Joshi, S. R. (2018). Therapeutic Role of Yoga in Type 2 Diabetes. Endocrinology and Metabolism, 33(3), 307. DOI:10.3803/enm.2018.33.3.307.

[77] Soroka, E. (2019). Yoga for Diabetes: 12 Poses and a Meditation to Mitigate Stress. Yoga Journal. 1-26. URL: https://www.yogajournal.com/practice/yoga-for-diabetes/ (Accessed time on March 15, 2021 at 3:00 pm).

[78] Sharma, M. and Knowlden, A.P. (2012). Role of Yoga in Preventing and Controlling Type 2 Diabetes Mellitus. Journal of Evidence-Based Complementary & Alternative Medicine,17(2) 88-95.
DOI: 10.1177/2156587212438899.

[79] Johnson, J. (2019). A review of therapies and lifestyle changes for diabetes. Medical News Today, 1-2. URL: https://www.medicalnewstoday.com/articles/317074.php (Accessed time on March 10, 2021

at 9:00 am).

[80] Babamiri, B., Bahari, D. and Salimi, A. (2019). Highly sensitive bioaffinityelectrochemiluminescence sensors: Recent advances and future directions. Biosensors and Bioelectronics, 111530. DOI: https://doi.org/10.1016/j.bios.2019.111530.

[81] Hardt, P.D., Brendel, M.D., Kloer, H.U. and Bretzel, R.G. (2008). Is pancreatic diabetes (type 3c diabetes) underdiagnosed and misdiagnosed? Diabetes Care,31 (Suppl 2):S165–S169. DOI: 10.2337/dc08-s244.

[82] Boutry, C. M., Beker, L., Kaizawa, Y., Vassos, C., Tran, H., Hinckley, A. C., Pfattner, R., Niu, S. M., Li, J. H., Claverie, J., Wang, Z., Chang, J., Fox, P. M. and Bao, Z. N. (2019). Biodegradable and flexible arterial-pulse sensor for the wireless monitoring of blood flow. Nature Biomedical Engineering, 3(1): 47–57. DOI:10.1038/s41551-018-0336-5.

[83] Islam, D., Huque, A., Sheuly, Mohanta, L.C., Das, S.K. and Sultana, A. (2018). Hypoglycemic and hypolipidemic effects of Nelumbonucifera flower in Long-Evans rats. Journal of Herbmed Pharmacology, 7:148–54. DOI:10.15171/jhp.2018.25.

[84] Rahimi-Madiseh, M., Karimian, P., Kafeshani, M. and Rafieian-Kopaei, M. (2017). The effects of ethanol extract of Berberis vulgaris fruit on histopathological changes andbiochemical markers of the liver damage in diabetic rats. Iranian Journal of Basic Medical Sciences, 20:552–556. DOI: 10.22038/IJBMS.2017.8681.

[85] Maideen, N.M.P. and Balasubramaniam, R.(2018). Pharmacologically relevant drug interactions of sulfonylurea antidiabetics with commonherbs. Journal of Herbmed Pharmacology.7:200–10. DOI:10.15171/jhp.2018.32.

[86] Rosenstock, J., Seman, L.J., Jelaska, A., Hantel, S., Pinnetti ,S., Hach, T. and Woerle, H.J. (2013). Efficacy and safety of empagliflozin, a sodium glucose cotransporter 2 (SGLT2) inhibitor, as add-on to metformin in type 2 diabetes with mild hyperglycaemia. Diabetes Obes Metab, 15(12):1154–60. DOI: 10.1111/dom.12185.

[87] MIT. (2018). A GPS for inside your body: Wireless system suggests future where doctors could implant sensors to track tumors or even dispense drugs. Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology (MIT), USA. ScienceDaily, August 20, 2018. URL: www.sciencedaily.com/releases/2018/08/180820085158.html (Acceessed on February 5, 2021 at 12:00 pm).

[88] Wilding, J. P. H., Norwood, P., T'joen, C., Bastien, A., List, J. F. and Fiedorek, F. T. (2009). A Study of Dapagliflozin in Patients With Type 2 Diabetes Receiving High Doses of Insulin Plus Insulin Sensitizers: Applicability of a novel insulin-independent treatment. Diabetes Care, 32(9), 1656–1662. DOI:10.2337/dc09-0517.

[89] Philippe, M.F., Benabadji, S., Barbot-Trystram, L., Vadrot, D., Boitard, C. (2011). Larger E. Pancreatic volume and endocrine and exocrine functions in patients with diabetes. Pancreas, 40(3):359–363. DOI: 10.1097/MPA.0b013e3182072032.

[90] Ershow, A.G. (2009). Environmental influences on development of type 2 diabetes and obesity: challenges in personalizing prevention and management. J Diabetes Sci Technol., 3(4):727–734. DOI: 10.1177/193229680900300418.

[91] Osler, W. and McCrae, T. (1921). The principles and practice of medicine: Designed for the use of Practitioners and students of Medicine. D. Appleton and Company, 1921, New York and London.. URL: https://archive.org/details/principlesandpr00mccrgoog/page/n6/mode/2up (Accessed time on March 16, 2021 at 10:00am).

[92] Wild, S., Roglic, G., Green, A., Sicree, R. and King, H. (2004). Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. Diabetes Care, 27(5):1047–1053. DOI: 10.2337/diacare.27.5.1047

[93] Fowler, M.J. (2008). Microvascular and Macrovascular Complications of Diabetes. Clinical Diabetes, 26(2):77–82. DOI: https://doi.org/10.2337/diaclin.26.2.77.

[94] Naser, K.A., Gruber, A. and Thomson, G.A. (2006). The emerging pandemic of obesity and diabetes: are we doing enough to prevent a disaster? Int J Clin Pract., 60(9):1093–1097. DOI: 10.1111/j.1742-1241.2006.01003.x.

[95] Frei, P., Mohler, E., Neubauer, G., Theis, G., Bürgi, A., Fröhlich, J., Braun-Fahrländer, C., Bolte, J., Egger, M. and Röösli, M. (2009). Temporal and spatial variability of personal exposure to radio frequency electromagnetic Fields. Environ. Res., 109, 779–785. DOI: https://doi.org/10.1016/j.envres.2009.04.015.

[96] Forouzanfar M.H., Forouzanfar, M.H., Alexander, L., Anderson, H.R., Bachman, V.F., Biryukov, S., Brauer, M., Burnett, R., Casey, D., Coates, M.M., Aaron Cohen, A., Delwiche, K., Estep, K., Frostad, J.J., Astha, K.C., Kyu, H.H., Moradi-Lakeh, M., Ng, M., Slepak, E.L., Thomas, B.A., Wagner, J., Aas-

  DOI: https://doi.org/10.30564/jer.v3i1.2826

vang, G.M., Abbafati, C., Ozgoren, A.A., Abd-Allah, F., Abera,S.F., Aboyans, V., Abraham, B., Abraham, J.P., Abubakar, I., Abu-Rmeileh, N.M.E., Aburto, T.C., Achoki, T., Adelekan, A., Adofo, K., Adou, A.K., Adsuar, J.C., Afshin, A., Agardh, E.E., Al-Khabouri, M.J., Al Lami, F.H., Alam,S.S., Alasfoor, D., Albittar, M.I., Alegretti, M.A., Aleman, A.V., Zewdie A Alemu, Z.A., Alfonso-Cristancho, R., Alhabib, S., Ali, R., Ali, M.K., Alla, F., Allebeck, P., Allen, P.J., Ubai Alsharif, U., Alvarez, E., Alvis-Guzman, N., Amankwaa, A.A., Amare, A.T., Ameh, E.A., Ameli, O., Amini, H., Ammar, W., Anderson, B.O., Antonio, C.A.T., Anwari, P., Cunningham, S.A., Arnlöv, J., Arsenijevic, V.S.A., Artaman, A., Asghar, R.J., Assadi, R., Atkins, L.S., Atkinson, C., Avila, M.A., Awuah, B., Badawi, A., Bahit, M.C., Bakfalouni, T., Balakrishnan, K., Balalla, S., Balu, R.K., Banerjee, A.,Barber, R.M., Barker-Collo, S.L., Barquera, S., Barregard, L., Barrero, L.H., Barrientos-Gutierrez, T., Basto-Abreu, A.C., Basu, A., Basu, S., Basulaiman, M.O., Ruvalcaba, C.B., Beardsley, J., Bedi, N., Bekele, T., Bell, M. L., Benjet, C., Bennett, D.A., Benzian, H., Bernabé, E., Beyene, T.J., Bhala, N., Bhalla, A., Bhutta, Z.A., Bikbov, B., Abdulhak, A.A.B., Blore, J.D., Blyth, F.M., Bohensky, M.A., Başara, B.B., Borges, G., Bornstein, N.M., Bose, D., Boufous, S., Bourne, R.R., Brainin, M., Brazinova, A., Breitborde, N.J., Brenner, H., Briggs, A.D.M., Broday, D.M., Brooks, P.M., Bruce, N.G., Brugha, T.S., Brunekreef, B., Buchbinder, R., Bui, L.N., Bukhman, G., Bulloch, A.G., Burch, M., Burney, P.G.J., Campos-Nonato, I.R., Campuzano, J.C., Cantoral, A.J., Caravanos, J., Cárdenas, R., Cardis, E., Carpenter, D.O., Caso, V., Castañeda-Orjuela, C.A., Castro, R.E., Catalá-López, F., Cavalleri, F., Çavlin, A., Chadha, V.K., Chang, J.C., Charlson, F.J., Chen, H., Chen, W., Chen, Z., Chiang, P.P., Chimed-Ochir, O., Chowdhury, R., Christophi, C.A., Chuang, T.W., Chugh, S.S., Cirillo, M., Claßen, T.K.D., Colistro, V., Colomar, M., Colquhoun, S.M., Contreras, A.G., Cooper, C., Cooperrider,K., Cooper, L.T., Coresh,. J. Courville, K.J., Criqui, M.H., Cuevas-Nasu, L., Damsere-Derry, J., Danawi, H., Dandona, L., Dandona, R., Dargan, P.I., Davis, A., Davitoiu, D.V., Dayama, A., de Castro, E.F., De la Cruz-Góngora, V., De Leo, D., de Lima, G., Degenhardt, L., Pozo-Cruz, B.D., Dellavalle, R.P., Deribe, K., Derrett, S., Jarlais, D.C.D., Dessalegn, M., deVeber, G.A., Devries, K.M., Dharmaratne, S.D., Dherani, M.K., Dicker, D., Eric L Ding, D.E.L., Dokova, K., Dorsey, E.R., Driscoll, T.R., Duan, L., Durrani, A.M., Ebel, B.E., Ellenbogen, R.G., Elshrek, Y.M., Endres, M., Ermakov, S.P. Erskine, H.E., Eshrati, B., Esteghamati, A., Fahimi, S., Faraon, E.J.A., Farzadfar, F., Fay, D.F.J., Feigin, V.L., Feigl, A.B., Fereshtehnejad, S.M., Ferrari, A.J., Ferri, C.P., Flaxman, A.D., Fleming, T.D., Foigt, N., Foreman, K.J., Paleo, U.F., Franklin, R.C., Gabbe, B., Gaffikin, L., Gakidou, E., Gamkrelidze, A., Gankpé, F.G., Gansevoort, R.T., García-Guerra, F.A., Gasana, E., Geleijnse, J.M., Gessner, B.D., Gething, P., Gibney, K.B., Gillum, R.F., Ginawi, I.A.M., Giroud, M., Giussani, G., Goenka, S., Goginashvili, K., Dantes, H.G., Gona, P., de Cosio, T.G., González-Castell, D., Gotay, C.C., Goto, A., Gouda, H.N., Guerrant, R.L., Gugnani, H.C., Guillemin, F., Gunnell, D., Gupta, R., Rajeev Gupta, Rv., Gutiérrez, R.A., Hafezi-Nejad, N., Hagan, H., Hagstromer, M., Halasa, Y.A., Hamadeh, R.R., Hammami, M., Hankey, G.J., Hao, Y., Harb, H.L., Haregu, T.N., Haro, J.M., Havmoeller, R., Hay, S.I., Hedayati, M.T., Heredia-Pi, I.B., Hernandez, L., Heuton, K.R., Heydarpour, P., Hijar, M., Hoek, H.W., Hoffman, H.J., Hornberger, J.C., Hosgood, H.D., Hoy, D.G., Hsairi, M., Hu, G., Hu, H., Huang, C., Huang, J.J., Hubbell, B.J., Huiart, L., Husseini, A., Iannarone, M.L., Iburg, K.M., Idrisov, B.T., Ikeda, N., Innos, K., Inoue, M., Islami, F., Ismayilova, S., Jacobsen, K.H., Jansen, H.A., Jarvis, D.L., Jassal, S.K., Jauregui, A., Jayaraman, S., Jeemon, P., Jensen, P.N., Jha, V., Jiang, F., Jiang, G., Jiang, Y., Jonas, J., B., Juel, K., Kan, H., Roseline, S.S.K., Karam, N.E., Karch, A., Karema, C.K., Karthikeyan, G., Kaul, A., Kawakami, N., Kazi, D.S., Kemp, A.H., Kengne, A.P., Keren, A., Khader, Y.S., Khalifa, S.E.A.H., Khan, E.A., Khang, Y.H., Khatibzadeh, S., Khonelidze, I., Kieling, C., Kim, D., Kim, S., Kim, Y., Kimokoti, R.W., Kinfu, Y., Kinge, J.M., Kissela, B.M., Kivipelto, M., Knibbs, L.D., Knudsen, A.K., Kokubo, Y., Kose, M.R., Kosen, S., Kraemer, A., Kravchenko, M., Krishnaswami, S., Kromhout, H., Ku, T., Defo, B.K., Bicer, B.K., Kuipers, E.J., Kulkarni, C., Kulkarni, V.S., Kumar, G.A., Kwan, G.F., Lai, T., Balaji, A.L., Lalloo, R., Lallukka, T., Lam, H., Lan, Q., Lansingh, V.C., Larson, H.J., Larsson, A., Laryea, D.O., Lavados, P.M., Lawrynowicz, A.E. et al……Murray, C.J. and GBD 2013 Risk Factors Collaborators. (2015). Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet, 386(10010):2287-323.

 DOI: https://doi.org/10.30564/jer.v3i1.2826

DOI: 10.1016/S0140-6736(15)00128-2.

[97] Clark, N. G., Fox, K. M. and Grandy, S. (2007). Symptoms of Diabetes and Their Association with the Risk and Presence of Diabetes: Findings from the Study to Help Improve Early evaluation and management of risk factors Leading to Diabetes (SHIELD). Diabetes Care, 30(11), 2868–2873. DOI:10.2337/dc07-0816.

[98] Wang J. (2008). Electrochemical glucose biosensors. Chemical Reviews, 108:814–825. DOI: 10.1021/cr068123a.

[99] Bowe, B., Xie, Y., Li, T., Yan, Y., Xian, H. and Al-Aly, Z. (2018). The 2016 global and national burden of diabetes mellitus attributable to PM 2·5 air pollution. The Lancet Planetary Health, 2(7), e301–e312. DOI:10.1016/s2542-5196(18)30140-2.

[100] Fairbrother, N., Newth, S. J. and Rachman, S. (2005). Mental pollution: feelings of dirtiness without physical contact. Behaviour Research and Therapy, 43(1), 121–130. DOI: 10.1016/j.brat.2003.12.005.

[101] Sancar, F. (2019). Childhood Lead Exposure May Affect Personality, Mental Health in Adulthood. JAMA, 321(15):1445–1446. DOI:10.1001/jama.2019.1116.

[102] Reuben A, Schaefer JD, Moffitt TE, et al. (2019). Association of Childhood Lead Exposure With Adult Personality Traits and Lifelong Mental Health. JAMA Psychiatry,76(4):418–425. DOI:10.1001/jamapsychiatry.2018.4192.

[103] Yao, J., Brauer, M., Wei, J., McGrail, K. M., Johnston, F. H., & Henderson, S. B. (2020). Sub-Daily Exposure to Fine Particulate Matter and Ambulance Dispatches during Wildfire Seasons: A Case-Crossover Study in British Columbia, Canada. Environmental Health Perspectives, 128(6), 067006. DOI:10.1289/ehp5792.

[104] Bennett, C. (2020). Pollution and Mental Health. News Medical Life Sciences. URL: https://www.news-medical.net/health/Pollution-and-Mental-Health.aspx (Accessed on March 13, 2021 at 12:00 pm).

[105] Cetin, Y. (2012). Impact of Mental Pollution on Learning and Memory. Procedia - Social and Behavioral Sciences, 46, 5320–5323. DOI: 10.1016/j.sbspro.2012.06.431.

[106] Dendup, T., Feng, X., Clingan, S. and Astell-Burt, T. (2018). Environmental Risk Factors for Developing Type 2 Diabetes Mellitus: A Systematic Review. International Journal of Environmental Research and Public Health, 15(1), 78. DOI:10.3390/ijerph15010078.

[107] Khan, A., Plana-Ripoll, O., Antonsen, S., Brandt, J., Geels, C., Landecker, H., Sullivan, P.F., Pedersen, C.B.,Rzhetsky, A. (2019). Environmental pollution is associated with increased risk of psychiatric disorders in the US and Denmark. PLOS Biology, 17(8), e3000353, 1-28. DOI: 10.1371/journal.pbio.3000353.

[108] Rajagopalan, S. and Brook, R. D. (2012). Air Pollution and Type 2 Diabetes: Mechanistic Insights. Diabetes, 61(12), 3037–3045. DOI:10.2337/db12-0190.

[109] WHO. (2004). Promoting mental health: Concepts, emerging evidence, practice: summary report. World Health Organization. URL : https://apps.who.int/iris/bitstream/handle/10665/42940/9241591595.pdf (Accessed time on March 11, 2021 at 11:00 am)

[110] Brokamp, C., Strawn, J. R., Beck, A. F., & Ryan, P. (2019). Pediatric Psychiatric Emergency Department Utilization and Fine Particulate Matter: A Case-Crossover Study. Environmental Health Perspectives, 127(9), 097006.1-7. DOI:10.1289/ehp4815.

[111] Lelieveld, J., Evans, J.S., Fnais, M., Giannadaki, D. and Pozzer, A. (2015). The contribution of outdoor air pollution sources to premature mortality on a global scale. Nature,525: 367–71. DOI: https://doi.org/10.1038/nature15371.

[112] Brunst, K. J. (2019). Myo-inositol mediates the effect of traffic-related air pollution on generalized anxiety symptoms at age 12 years. Environmental research, 175, 71–78. DOI: https://doi.org/10.1016/j.envres.2019.05.009._

[113] Dzhambov, A. M. (2018). Ambient air pollution and diabetes in China. The Lancet Planetary Health, 2(2), e52–e53. DOI:10.1016/s2542-5196(18)30002-0.

[114] Ruder, K. (2021, January 20). Is There a Link Between Type 2 Diabetes and Air Pollution? Everyday Health. Newsletter. URL: https://www.everydayhealth.com/type-2-diabetes/is-there-a-link-between-type-2-diabetes-and-air-pollution/ (Accessed time on March 13, 2021 at 12:00 pm).

[115] Porter, E. (2018). Is Frequent Urination a Sign of Diabetes? Healthline. URL: https://www.healthline.com/health/frequent-urination-diabetes (Accessed time on February 15, 2021 at 11:00 am).

[116] Agarwal, N. and Hussain, S.Z. (2018). A Closer Look at Intrusion Detection System for Web Applications. Security and Communication Networks, 1–28. DOI: https://doi.org/10.1155/2018/96013.

DOI: https://doi.org/10.30564/jer.v3i1.2826

[117] Butun I., Morgera S. and Sankar R. (2014). A survey of intrusion detection systems in wireless sensor networks.IEEE Commun. Surv. Tutor, 16:266–282.
DOI: 10.1109/SURV.2013.050113.00191.

[118] Butun I., Ra I.H. and Sankar R. (2015). PCAC: Power-and Connectivity-Aware Clustering for Wireless Sensor Networks. EURASIP J. Wirel. Commun. Netw., 1:1–15.
DOI: 10.1186/s13638-015-0321-6.

[119] Bal, A. (2000). Diabetes: ethical, social and economic aspects.The Indian Journal of Medical Ethics, 8:3. PMID: 16323366.

[120] WHO. (2020c). WHO works with the Government of the United Kingdom to tackle misinformation. World Health Organization (WHO). URL: https://www.who.int/campaigns/connecting-the-world-to-combat-coronavirus/how-to-report-misinformation-online (Accessed time on January 11, 2021 at 12:00pm.).

[121] Roozenbeek, J., Schneider, C.R., Dryhurst, S., Kerr, J., Freeman, A.L.J., Recchia, G., vander Bles, A.M. and van der Linden, S. (2020). Susceptibility to misinformation about COVID-19 around the world. Royal Society Open Science, 7: 201199, 1-15.
DOI: http://dx.doi.org/10.1098/rsos.201199.

[122] Giles Keir. (2020, April 9). Beware Russian and Chinese Positioning for after the pandemic. Chatham house.URL:https://www.chathamhouse.org/2020/04/beware-russian-and-chinese-positioning-after-pandemic?gclid=EAIaIQobChMInIPlhsqa7gIVNdWWCh1xeA3uEAMYASAAEgKkCvD_BwE (Accessed time on January 10, 2021 at 3:00 pm.).

[123] Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C.M., Brugnoli, E., Schmidt, A.L., Zola, P., Zollo, F. and Scala, A. (2020). The COVID-19 social media infodemic. Scientific Report, 10, 16598.
DOI: https://doi.org/10.1038/s41598-020-73510-5.

[124] CDC. (2020). National Diabetes Statistics Report 2020: Estimates of Diabetes and its Burden in the United States, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), 1-31. URL: https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf (Accessed time on March 16, 2021 at 12:00 pm).

[125] Ding, K., Reynolds, C.M., Driscoll, K.A. and Janicke, D.M. (2021). The Relationship Between Executive Functioning, Type 1 Diabetes Self-Management Behaviors, and Glycemic Control in Adolescents and Young Adults. Current Diabetes Report, 21 (10).
DOI: https://doi.org/10.1007/s11892-021-01379-3.

[126] Lyles, C.R., Sarkar, U. & Osborn, C.Y. (2014). Getting a Technology-Based Diabetes Intervention Ready for Prime Time: A Review of Usability Testing Studies. Current Diabetes Report, 14 (10), 534.
DOI: https://doi.org/10.1007/s11892-014-0534-9.

[127] Martin, K., Hatab, A., Athwal, V.S., Jokl, E. and Hanley, K.P. (2021). Genetic Contribution to Non-alcoholic Fatty Liver Disease and Prognostic Implications. Current Diabetes Report, 21(8), 1-8.
DOI: https://doi.org/10.1007/s11892-021-01377-5.

[128] Gu, Y., Rampin, A., Alvino, V.V., G. Spinetti and P. Madedduet. (2021). Therapy for Critical Limb Ischemia: Advantages, Limitations, and New Perspectives for Treatment of Patients with Critical Diabetic Vasculopathy. Currernt Diabetes Report, 21 (11), 1-13.
DOI: https://doi.org/10.1007/s11892-021-01378-4.

[129] Greene, F. L., Compton, C. C., Fritz, A. G., Shah, J. P. and Winchester, D. P. (Eds.). (2006). AJCC Cancer Staging Atlas.
DOI:10.1007/0-387-33126-3.

[130] Nix, G., Wilson, J., Schmitz, P., Dees, J. and Hofwijk, R. (1983). Carcinoma of the ampulla and papilla of Vater. R*ö*Fo - Fortschritte Auf Dem Gebiet Der R*ö*ntgenstrahlen Und Der Bildgebenden Verfahren, 138(05), 531–535.
DOI:10.1055/s-2008-1055779.

[131] Atkinson, M.A., Campbell-Thompson, M., Kusmartseva, I. and Kaestner, K.H. (2020). Organisation of the human pancreas in health and in diabetes. Diabetologia, 63,1966–1973.
DOI: https://doi.org/10.1007/s00125-020-05203-7.

[132] He, X.D., Wu, Q., Liu, W., Hong, T., Li, J.J., Miao, R.Y. and Zhao, H.T. (2014). As-sociation of metabolic syndromes and risk factors with ampullary tumors development: A case-control study in China. World J Gastroenterol, 20(28): 9541-9548
URL: http://www.wjgnet.com/1007-9327/full/v20/i28/9541.htm
DOI: http://dx.doi.org/10.3748/wjg.v20.i28.9541.

[133] Gruberg, L., Weissman, N.J., Waksman, R.F., Fuchs, S., Deible,R., Pinnow, E.E., Ahmed, L.M., Kent, K.M., Pichard, A.D., Suddath, W.O., Satler, L.F., Lindsay Jr. J. (2002). The impact of obesity on the short-term and long-term outcomes after percutaneous coronary intervention: The obesity paradox? J Am Coll Cardiol, 39:578-84.

[134] García-Cano, J. (2016). If you suffer from type-2 diabetes mellitus, your ERCP is likely to have a better outcome. Editorial. RoFo-Revista Espa*ñ*ola

de Enfermedades Digestivas, 108(7),

[135] Li, D. (2011). Diabetes and Pancreatic Cancer. Molecular Carcinogenesis, 51(1), 64–74. DOI: 10.1002/mc.20771.
DOI: http://dx.doi.org/10.17235/reed.2016.4521/2016.

[136] DAB. (2018). Introduction to diabetes mellitus: Epidemiology of diabetes mellitus, Chap. 1. Diabetes Mellitus, 5th Edn, Ahmed, T. (E. Ed.). Certificate Course on Diabetology: Distance Learning Program. Diabetes Association of Bangladesh (DAB), 1–173. ISBN: 984-32-2552-X.

DOI: https://doi.org/10.30564/jer.v3i1.2826