

## CHAPTER 1. INTRODUCTION

### 1.1 Background

Approximately 422 million people are afflicted with diabetes, and by 2030 it will be the 7<sup>th</sup> leading cause of death in the world (“Diabetes”, 2016). In the US, diabetes results in more annual deaths than AIDS and breast cancer combined, and a 50 year old diabetic dies 6 years earlier than his non-diabetic counterpart (“Statistics About Diabetes”, 2017). Additionally, diabetics’ life expectancy is further reduced by their vulnerability to various co-morbid conditions such as hypoglycemia, hypertension, heart attack, stroke, blindness, kidney disease and amputations (“Statistics About Diabetes”, 2017).

#### Comment:

- Broad idea of the diabetes situation ‘globally’
- Starts grabbing interest and establishing a potential ‘general’ problem
- Supported by facts not observations

A knowledge, attitudes and practices (KAP) study conducted in Malaysia identified that “poor self-management, lack of motivation, inadequate social support or lack of resources” were plausible causation factors to the increased incidence and morbidity associated with diabetes in the country (Ng, Chan, Lian, Chuah, Noora & Kadirvelu, 2012, p. 724). Similar causation factors were found in North India (Ahmad & Ahmad, 2015). The KAP study conducted there revealed that patients’ lack of knowledge and poor attitude towards self care increased the prevalence and mortality rate of the condition (Ahmad & Ahmad, 2015). Another study performed in Nepal resulted in low KAP scores which highlighted the need for attitude interventions towards diabetic care management (Upadhyaa, Palaian, Shankar, Mishra, Pokhara, 2008).

#### Comment:

- What are the underlying issues to the global situation – a country structured view
- A closer look at the problem
- Supported by research
- Structure and what to write? It is an **art and a science**.

Quality Improvement (QI) strategies for diabetes care management and delivery have been proposed (Worswick et al., 2013). **These strategies are built on the premise of a gap that exists between best and actual care related to diabetes management** (Worswick et al., 2013).

Worswick et al. (2013) conducted a systematic review to evaluate the effectiveness of proposed QI strategies for improving diabetic patient outcomes. **It was found that patient education and support, telemedicine and provider role changes conclusively resulted in improved glycaemic control in patients** (Worswick et al., 2013).

**Comment:**

- A 'glimpse' at a solution path/concept
- The general area of solution
- Structure and what to write? It is an **art and a science**
- Supported by research

## **1.2 Local Background**

In 2011, former Minister of Health Dr. Leslie Ramsammy reported that diabetes is one of the leading causes of death in Guyana. Dr. Ramsammy revealed that approximately 425 Guyanese die each year from diabetes, and those living with it have an increased 80% risk of dying prematurely (Kaieteur News, 2011). Later in 2015, Dr. Karen Cummings, Minister within the Ministry of Public Health attributed the alarming statistics to patients' poor lifestyle practices and ineffective chronic care management (Guyana Chronicle, 2015). **These causes are similar to findings from the KAP studies conducted in Malaysia (Ng, Chan, Lian, Chuah, Noora & Kadirvelu, 2012, p.724), North India (Ahmad & Ahmad, 2015) and Nepal (Upadhyaa, Palaian, Shankar, Mishra, Pokhara, 2008).**

**Comment:**

- Local context alone is insufficient
- Holistic view = Enriched background
- Observe the broad to narrow structure

### 1.3 Technology and Diabetes

Diabetes self-management education (DSME) and condition control geared towards healthy lifestyle practices result in improved diabetic outcomes and the reduction of long term complications (Shah & Garg, 2015).

Through the use of technology, it is possible to employ digital tools to assist this DSME process. It is our opinion that an Electronic Medical Record (EMR) integrated with a Personal Health Record (PHR) will present the technical means for facilitating ideal electronic diabetes management associated with DSME. In fact, the structure and functionalities of such an integrated system make it suitable for the purpose of chronic condition management (Kaiser Permanente Institute, 2007). Additionally, Wells, Rozenblum, Park, Dunn, and Bates (2014) conducted a mixed method study to investigate the use of PHRs for the chronic disease population. This research revealed that integrated systems are a “powerful vehicle to support patient-clinician interaction, patient information needs, and engagement in the care process” for chronic conditions (Wells et al., 2014, p.422).

While the EMR-PHR technology is theoretically ideal, it lacks substantial empirical evidence required to pivot its widespread implementation (Detmer, Bloomrosen, Raymond, & Tang, 2008). Additionally, research must be done to determine the effectiveness of using digital tools for the purpose of diabetes management (Shah & Garg, 2015). There is therefore a need to determine the feasibility of these systems with specific reference to improving diabetes-related outcomes and patient involvement.

#### Comment:

- We are home! ...somewhat
- General idea of problem in the technological sphere
- Broad not specific
- Provide technological context

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