



Lived Experiences of Diabetes Patients in Rural Areas of Ghana: Discovering the Forces that Determine Psychosocial Care

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Authors' contributions

This work was carried out in collaboration among all authors. Author INK designed the study, performed the analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors JA and TH managed the literature review and performed the analysis. All authors read and approved the final manuscript.

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ABSTRACT

Aim: Diabetes has been identified to cause prolonged ill health in many people living in rural communities in Ghana where access to health care delivery appears to be inadequate and of low quality due to financial constraints, limited health resources, poor road network, low literacy levels and limited access to specialist care. Individuals diagnosed with diabetes often express varied psychological and emotional imbalances. Therefore, immediate psychosocial care is needed to prevent patients living in rural areas from getting into severe depression mode and other mental health complications. Yet, understanding how people diagnosed with diabetes should react in order to prevent severe psychological implications has not been adequately explored in Ghana. This study explored the lived experiences of diabetes patients living in rural areas of the Eastern Region of Ghana with the aim of discovering the forces that determine appropriate psychosocial care for patients.

Study Design: Using the Interpretative Phenomenological Analysis (IPA), 31 diabetes patients were purposively selected from four hospitals in the region, and interviewed using a semi-structured interview guide to investigate participants' perceptions, thoughts, feelings, and experiences about the disease and how the participants own experiences could be used to construct a framework of immediate care applicable in their own social certain.

Results: The study generated themes along productive and unproductive lines to demonstrate the lived experiences of diabetes patients. Psycho-emotional reactions, psychological shock and emotional outbursts constitute unproductive forces. This caused some of the patients to express suicidal ideations at the extreme point. On the other hand, individual resilience and disposition, guidance and support from care providers, family and community members constitute the productive forces that provide an appropriate framework for psychosocial care for diabetes patients.

Conclusion: The study has shown the need to adequately address the psychological and emotional needs of diabetes patients to prevent extreme forms of psychological distress (anxiety and depression). The authors, therefore, recommend an integrated care model for diabetes patients' in rural areas that encompass a psychosocial therapy built around the primary healthcare concept with the establishment of counseling units in all Primary Health Care facilities. This will offer a platform to generate personal and community actions and decisions to adequately address the immediate psychological and emotional needs of diabetes patients in rural areas.

Keywords: Psychological; emotional; diabetes; rural areas.

1. INTRODUCTION

In Ghana, diabetes has been identified to cause prolonged ill health in over four million of the Ghanaian population [1,2] and threatens the health of about 50% of the population[3]. According to the International Diabetes Federation (IDF), there were 266,200 cases of diabetes in Ghana in 2015 and the number of adults who died of diabetes was 4,790 [4]. Again, the IDF [4] reported 518 diabetes cases among every 1000 individuals in Ghana with a national prevalence of 3.6%. Approximately 281 adults between the ages of 20 -79 years were reported with diabetes in every 1000 individuals and 1,209 Type 1 diabetes cases were found in children and adolescents between 0-19 years in 2019 (IDF, 2019). In the same year, approximately 5,397 diabetes related deaths were recorded in the adult population, and the national prevalence and age adjusted comparative prevalence of children and adults' diabetics was 1.8 percent and 2.5 percent respectively [5]. Globally, it has been reported that diabetes kills one person in every 10 seconds, and within 30 seconds four people have their legs amputated [6]. It is alarming to note that the prevalence of diabetes mellitus in some parts of Ghana is even higher than the world average of 2.8% and managing diabetes has become complicated especially for people living in rural areas.

It is estimated that almost 50 percent of the total global population lives in rural areas [7]. Ghana presents similar trends as almost half of the population (49.1 percent) lives in rural areas[8]

and mainly access healthcare through the primary healthcare concept which is based on a three-tier system(district, sub-district and Community-based Health Planning and Services - CHPS). Worldwide, access to health care delivery in rural areas appears to be inadequate and of low quality in many cases partly due to financial constraints, limited resources for health, poor road network and transport systems, low literacy levels, limited healthcare facilities, insufficient numbers of healthcare providers, mistrust and communication challenges [9, 10]

People living in rural areas experience more health risk factors and diabetes-related mortality than those living in urban areas [11]. In 2017, the IDF estimated that 146 million people living in rural areas had diabetes - projected to increase to 279 million by 2045 [12] and this could be attributed to limited access to quality healthcare in rural areas. Clearly, diabetic care in Ghana has suffered some challenges because of insufficient policies and guidelines. There are few diabetes specialist clinics in Ghana and those facilities are all located in the urban centres - thus limiting access to specialist care to many diabetic patients living in rural areas [13,14].

Psychological and emotional outcomes have been found to be associated with diabetic patients [15]. Individuals often express varied psychological and emotional imbalances after they have been diagnosed with diabetes. For example, individuals experiencing hyperglycemia are prone to feelings of irritability, restlessness, and agitation [16]. Similarly, individuals in a

hypoglycemic state show evidence of impaired judgment, emotional instability, moodiness, irritability, belligerence, and fatigue [17]. Patients upon diagnosis of diabetes get shock attacks, become terrified or frightened, frustrated and depressed, tensed up and irritated, angry, sad and weep a lot [18,19,20,21,22]. Some patients express disbelief and even question their behaviours [22,23]. Others feel bad, become quick-tempered, weep and never want to be alone at home – yet some may regret their initial actions [24].

Again, in a study to examine the prevalence of anxiety and depression in a population aged over sixty years with Type 2 Diabetes (T2D) in Tunisia, Masmoudi et al. [25] found that prevalence of anxiety and depression among patients was 40.3% and 22.6% respectively. Mothers with Gestational Diabetes Mellitus (GDM) in Ghana have also reported that diabetes has affected their psychological well-being [26]. Furthermore, some individuals have been found to demonstrate psychological and emotional distress upon diagnosis of diabetes [27] and these can lead to suicidal attempts [28,29,30]. For example, in Ethiopia it was found that the prevalence of suicidal plans and attempts among patients was as high as 10.7% and 7.6% respectively and the attempts were mostly associated with female patients and those with comorbidity and psychological distress [30]. Again, suicidal attempts were associated with patients who had poor social support and glycemic control. Similar findings were made in China where 15.3% increase in suicidal thoughts and behaviours were detected among diabetes patients [28].

The presence of psychological problems can interfere with self-care practices and management of diabetes which can result in poor health outcomes among patients [18]. Evidence suggests that when persons living with diabetes also experience depression, it affects their adherence to medication and self-care practices in turn resulting in severe physical symptoms [31]. It is therefore important that immediate psychosocial care is provided to patients especially those living in rural areas where specialist care is not available so that they do not get into severe depression mode and other mental health complications.

Indeed, several studies have shown the experiences of diabetes patients that could constitute psychosocial care in various forms.

For example, acceptance of diabetes as a disease by patients has been cited in the literature [22,27,32]. Family support has also been found to improve diabetes management and control [33,34]. Again m-health services are widely used to increase access to the management of diabetes patients [24]. Other diabetes patients have expressed faith in God as a way of managing their illness [24]. Furthermore, the studies have shown that dietary requirements and lifestyle changes are major contributing factors to diabetes management [33,35,36]. Yet these studies failed to distinctly express the various forms of managing diabetes in a more profound manner that distinguishes between productive and unproductive forces.

This study explores the lived experiences of diabetes patients living in rural areas of the Eastern region of Ghana with the aim of discovering the forces that determine appropriate psychosocial care for patients. The Eastern region was a focus for this study because there have been increasing diabetes cases from 22,001 in 2016 to 23,689 in 2017 as reported at the Eastern Regional Health Directorate [37]. Moreover, people living in rural areas in the Eastern region constitute about 65% of the entire regional population [8] as against the national average of 41.9%. Even though there were no data to isolate cases of diabetes patients in terms of rural and urban, the authors argue that the probability of most people from rural areas having diabetes is high because of the high rural population in the region and limited access to quality healthcare in rural areas in the region.

Drawing conclusions from a recent study on nursing students' first encounter with a dying patient or the dead [38], the authors argue that the understanding of productive and unproductive forces (see Fig. 1) in dealing with psychological distress could be applied in this study to discover the forces that can help determine psychosocial care for patients diagnosed with diabetes in rural areas. This can prevent severe and complicated mental health issues among diabetes patients in rural areas in Ghana.

2. MATERIALS AND METHODS

2.1 Research Design

The Interpretative Phenomenological Analysis (IPA) was adopted for the study because the authors were interested in the subjective

meaning people give to events in their lives rather than just representing or recording objective events. IPA is concerned with how participants make meaning of their personal and social worlds, and then the researcher attempts to interpret and understand the situation [39]. IPA was more suitable for this research since the aim was to understand from the perspective of participants, their experiences, thinking and feelings of living with the disease in the rural area and how the participants own experiences could be used to construct a framework of immediate care applicable in their own social certain.

2.2 Participants

Participants were diabetic patients who lived in the rural areas, and visited the diabetes clinics for regular clinical schedules in four urban hospitals in the Eastern Region. The participants could only use urban hospitals because diabetes clinics are only found in hospitals located in urban centres while the primary healthcare facilities at the sub district and community levels (health centres and CHPS compounds) do not have diabetes units. Thirty one participants were purposively sampled for the study. The authors employed saturation technique to estimate the sample size as this method is widely accepted to

select sample sizes in qualitative research [39]. Data saturation in this study described the point or time when participants were no longer expressing any new idea or the data being collected were not effecting any change to the data already collected.

2.3 Recruitment of Participants

To be selected for the study, participants had to be a diabetic diagnosed not less than six month at the time of the research, and should be living in rural area located in the Eastern Region. A person diagnosed with any type of diabetes (Type 1, Type 2 and Gestational Diabetes) was accepted into the study. Furthermore, participants should be able to articulate their views and communicate well in English or Twi (local language). The hospital administration was contacted about the purpose of the study and medical officers at the diabetic clinics gave participants a brief introduction to the study and its objectives, and asked for verbal consent from the participants to participate in the research. Patients who consented were then interviewed at the hospital premises. Interviews were conducted by the researchers at the hospital premises. Interviews were audio taped and later transcribed.

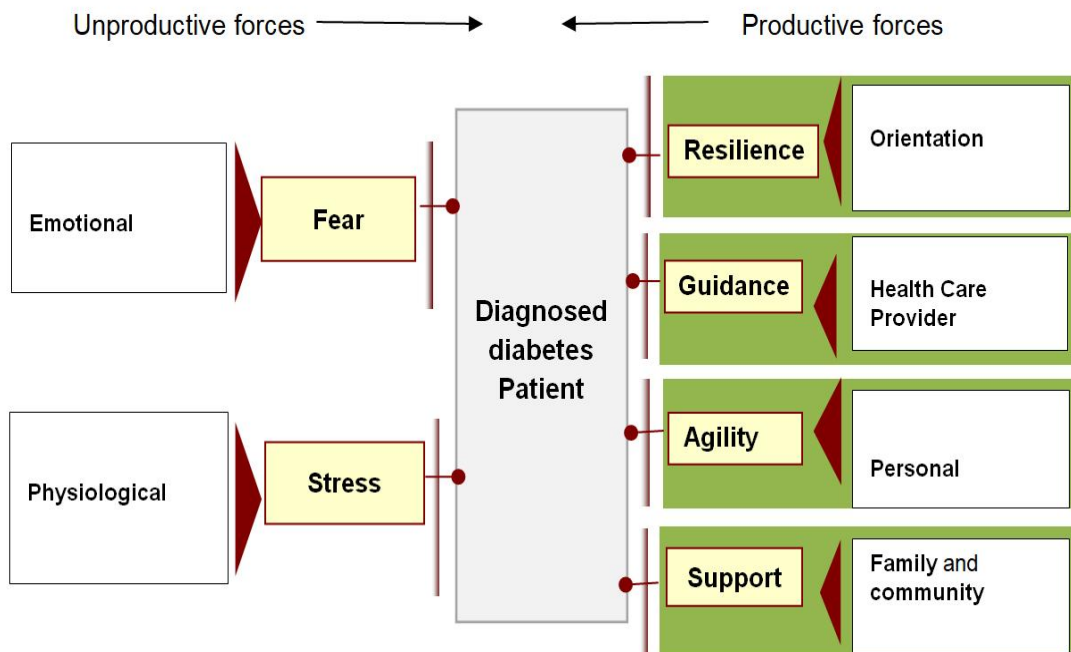


Fig. 1. Dealing with psychological distress
 Source: Adapted from Kwakye, Antwi, Essel, Yeboah [38]

2.4 Demography of Participants

Twenty six of the participants selected were Type 2 diabetics, and the remaining five had been diagnosed with Type 1 diabetes. The participants were made up of 25 females and six males. The ages of participants ranged between 33 and 89 years. In terms of marital status, 13 of the participants were married, eight widowed and five single. Additionally, three were divorced and two were separated. Participants were mostly farmers and traders. Most of the patients were indigenes of the area and had lived and spent all their lives in rural areas. Patients had lived with diabetes between one and 25 years. This means that participants living in those areas were more able to articulate the dynamics and challenges that came with living with diabetes. In terms of medication, five patients reported that they had been on insulin injection, 23 had been taking drugs only, and the remaining three participants used both insulin and drugs. The appointment schedules of patients to clinic ranged between two weeks and four months, with a majority on a two-month schedule.

2.5 Data Collection Procedure

A semi-structured interview was used to investigate participants' perceptions, thoughts, feelings, and experiences about the disease. This approach was adopted to allow the researcher to ask follow-up questions on areas that needed more clarification. The semi-structured interview had been the best way to collect data for IPA studies and most published IPA studies have used the technique [38]. Interviews were audio-recorded which lasted between 45 minutes and an hour. Interviews were conducted in the local language (Twi) and later transcribed into English for easy analysis. The face-to-face interview helped the interviewer to establish rapport, trust and intimacy with each participant. The interviewer and participants had a brief chat about general issues in the rural areas. This prepared participants for the main interview, and also enabled the researcher to establish a common ground.

The interview started with general questions, for example: "How did you come to live in this area?" This enabled participants to talk freely; where responses were insufficient, the interviewer probed further. After the interviewer had established rapport with participants, initial questions were asked to elicit participants' experiences in the rural area. The questions

were then narrowed to participants' thoughts and feelings when they got to know about their diabetes status. The researcher's interest was to identify participants' mental and emotional state and reactions upon knowing they had got the disease. The participants were again asked to describe any advice, information or help they received when they were first diagnosed. Finally, they were asked to describe a typical experience of living with diabetes in the rural area. Questions included: "Which aspect of the illness frustrates your life?"

2.6 Data Analysis

The interview data were transcribed to text format by the researcher and crossed checked with footnotes taken to ensure that the texts reflected participants' descriptions. Analysis was therefore carried out in accordance with IPA principles [38]. The researchers withheld all previous knowledge, experiences and ideas they had about the phenomena before the commencement of the analysis. At the initial stages of analysis, the texts produced from the interviews were read several times to enable the researcher to familiarize himself with the texts, and gain an understanding of participants' experiences. At this stage, notes that reflected the initial thoughts and observations of the participants were taken down.

During the second stage of analysis, themes that reflected productive and unproductive forces [37] were formed from the texts using the notes that had already been made. This was done separately for each interview transcript. At stage three, the researchers introduced structure into the analysis by grouping themes that shared a common link into clusters. The researchers constantly referred to each original transcript in an attempt to restructure the themes. Themes were then reordered in a coherent manner and a label given to each cluster of themes. Finally at stage four, the researchers produced a summary table of themes with titles, relevant quotations and line numbers from the original texts. The researchers then moved on to each subsequent transcript to do the analysis following the same principles and stages stated above. Themes from each participant's transcript were captured in order to identify common themes and new ones. At stage five of the analysis, the themes identified from the various transcripts were finally integrated for a final list of Master Themes and their constituent themes. These themes were given superordinate themes which reflected the

essence of participants' experiences in the rural area grouped into productive and unproductive forces. Finally, the final master theme was discussed with colleague researchers to ensure that all the experiences of the participants had been captured by all the superordinate themes.

2.7 Reliability

The researcher addressed the following questions during data analysis in an attempt to ensure reliability: Did the descriptions capture the experience? Did the structure match a participant's experience? Did the structure emerge from the data? Did the theme and category titles relate to the primary source material? Do others see the description?

2.8 Validity

In order to ensure the trustworthiness of this study, the researchers used peer review and debriefing, clarification of researcher bias, and member checking [40]. Peer review and debriefing involves locating a person (a peer debriefer) who reviews and asks questions about the qualitative study so that the account will resonate with people other than the researcher. This strategy involved an interpretation beyond the researcher and invested in another person-adds validity to an account. Clarification of researcher bias is a self-reflection that creates an open and honest narrative that will resonate well with readers. Member checking allows participants to review the transcript as accurate recordings of their experience [41]. In this study, participants were contacted to read through the transcript to ensure that the transcripts had captured what transpired during the interview. This allowed for clarifications and verifications in areas that were not clear during the interviews, and it also helped to add to the depth of data collected [42].

3. RESULT AND ANALYSIS

The main theme that emerged from the phenomenological deduction was psycho-emotional reactions with three sub-themes: psychological shock, emotional outburst and positive reinforcements. The authors presented these themes along the lines of productive and unproductive forces based on the assumption that peoples' reactions to situations are influenced by both productive and unproductive forces and these forces coagulate to define the ultimate individual responses. These were

represented as reaction stages one and two. Reaction stage one constitute unproductive forces (psychological shock and emotional outburst) and reaction stage two constitute the productive forces (positive reinforcements) as shown in Table 1 below.

3.1 Unproductive Forces (Psycho-Emotional Reactions)

3.1.1 Psychological shock

After hearing the news of testing positive for diabetes, most of the patients experienced a sudden intense feeling of fear, as they were taken by surprise because of the danger the disease poses to one's health and well-being, and the stress involved in its management and treatment. Patients got frightened upon hearing the results of the diagnosis.

I was frightened because I have never seen anybody with that illness in my family. Even my mother who was very old did not have that illness. (Lydia)

Diabetes is a dangerous disease which can lead to death if the treatment process is not started on time, and intensive care and monitoring not delivered to the patient. As a result of the severity of the disease, patients had no choice but exhibit fear for the state of their health and well-being. Victoria had this to say:

I was afraid because it is a scary disease. People often say diabetes kills so I was afraid (Victoria).

The fear expressed is due to the scary nature of the disease and sometimes the financial burden it imposes on the patient which may eventually lead to her death; its cure was a lifetime struggle. Ohemaa was frightened because she thought the disease affected only the elderly so she was surprised at how a young lady like her could be afflicted by such a disease. This is how Mannix narrated his fears:

It was diabetes that killed my father. So when I was told that I had it, I was terrified ... How it killed my father: I saw everything. My father got blind and had a stroke in addition. He was bedridden for seven years

before he died. I knew how it affected my father. I was the one supporting and carrying him around (Mannix).

Others were shocked and terrified due to their perception of diabetes as a disease that affected the rich. *I was shocked, frightened and I cried,* says Faustina.

Getting to know that diabetes was a chronic disease made patients anxious, especially with the thoughts of taking medicine to manage the sickness for the rest of their lives. These thoughts and their effects haunted patients, resulting in emotional and psychological instability (excessive thinking). Some patients could not believe the results of tests conducted on them. It was a moment of disbelief for Charity. *I didn't believe the first time they told me.* For her, it was difficult accepting the results of the laboratory tests. Worry was one of the psychological shocks experienced by the patients. When the news was broken to patients about testing positive for diabetes, the threats of the disease to the health of the patients caused anxiety about actual or potential problems related

to the disease. Because of the dangers attributed to the disease, most of the patients became anxious and began to worry about their future with the disease and the stress involved in managing it. This is because the treatment process is time-consuming which was going to affect patients' daily activities and thus having a negative impact on their lives. This was the perspective of Margret:

I was really sad, and it worried me. My grandmother had diabetes before she died and she was 95 years. My mother was also diagnosed of this same disease and she has been coming for check-up here, but hers is better now. So I was very worried.

However, Akwasi was not bothered about the outcome of the laboratory tests being positive or negative. This was because he knew it was a congenital disease, so it was not a surprise to him.

I thought it was a family disease so I was not bothered at all.

Table 1. The Psychological and Emotional Experiences of Patients after Diagnosis

Themes	Number of Participants
Psycho-Emotional { Reactions stage one}	
Psychological Shock	
Shocked (Surprised)	7
Frightened (Fear and Terrified)	3
Frustration (Lost hope)	3
Worry (Excessive thinking)	12
Location leading to Self-blame (Self-questioning and Disbelief)	2
Suicidal thoughts	1
Emotional Outburst	
Wept (Sad and Pain)	9
Shyness	2
Hyperactive	1
Emotional exhaustion (Confronted with reality)	1
Inadequate Psychological Care	
Lack of health provider time	20
Positive Reinforcements {Reactions stage two}	
Alertness and Resilience	
Psychological acceptance	
Compliance	14
Dietary lifestyle changes	21
Guidance and support	
Family support	11
Prayers	7
Counseling	20

Source: Interview Data, 2020

It was a frustrating experience for some of the patients when they realized that they were not in control of the outcome and the challenges associated with diabetes. Patients were frustrated by their inability to take control over their lives and achieve something meaningful, in addition to difficulties in dealing with the challenges that the disease presented. This could be deduced from the experiences of Ampofowaa:

What frustrates me most is urination. I can urinate all day and it is that which disturbs me. I urinate at short intervals. Additionally, I experience discomfort in my stomach and this also worries me.

This led to loss of hope on her part. *I don't have any hope from anywhere*, says Ampofowaa. Some patients attributed the occurrence of the stressful condition to themselves, taking responsibility for their actions that led to the disease, and also questioned their own actions and motives as to why they were in that particular situation. This was how Victoria blamed herself:

When the doctor said it, I realized I hadn't taken good care of myself. Because as a seamstress, I don't sleep and I drink a lot of coffee so when the doctor told me, I blamed myself.

She believed her sedentary lifestyle of sitting for long hours and not getting enough sleep contributed to her illness. Like Patience who was a drunkard and always drank to stupor, Victoria admitted she would not blame anybody for her disease but rather herself. The two patients wished to have made other choices that could have changed the results of the tests. Other patients also questioned themselves, had flashbacks to their previous lifestyles and wondered how they contracted the disease. Faustina had this to say:

I was asking myself about where it came from, how I got it and in which way did I get it. In fact, when he (doctor) told me, I didn't know how it came about. So when I came back again, I asked the doctor how come I got this disease.

The most threatening psycho-emotional reaction a patient revealed to the researcher was the suicidal ideation. Suicidal tendency was the available option when he realized that life was not going to be the same as it used to be.

My thinking is that now my leg has been amputated, I cannot do anything again. So I had a suicidal thought that if I got any poison I would drink and die ... But as I'm sitting here right now what work can I do? I cannot do any work, unless somebody visits and gives me some money to buy some food.
(Acheampong)

Acheampong was emotionally exhausted after being confronted with the reality that his leg had been amputated. To him, there was no need to live since he would no longer be in position to do what he used to do. Thus, he needed to completely adapt to a new lifestyle due to the amputation. It was really a disturbing moment for him upon hearing that his leg would be amputated because of the cellulitis. He narrated that he became hyperactive after the surgery. In fact, he refused to eat. The researcher further questioned Acheampong if he ever tried the suicide to which the patient responded in the negative. He noted that coming to the hospital to see other patients gave him hope. Again, when patients met at the clinic, they encouraged each other and that gave him the hope to carry on with the treatment and realized that his amputation was not a death sentence.

Seeing other patients in that condition gave me hope. Although some patients died three days after the amputation, others have also survived and lived with the condition for many years and they are still doing well. So sharing experience with such people was helpful for me at that time.

From the excerpts of Acheampong, there is the need to build social networks for patients to encourage each other and to share ideas relating to the disease. Sharing experiences together as diabetes patients will help reduce some of the psychological and emotional distress associated with the disease. Thoughts of harming oneself can be intense and overwhelming and it is

common for depressed people to kill or harm themselves. Therefore, patients must be made aware that these are thoughts and that they need not keep to themselves and act on it later. Rather they should make these thoughts known to doctors who can then recommend treatment. Family members and friends should be made aware of patients' suicidal thoughts so they can call for help at the right time.

3.1.2 Emotional outburst

It was really a sad moment for some of the patients. Some were sad because of the fact that they had BP and additionally, they had been diagnosed of diabetes. The thought of taking medication and managing these two diseases was a major challenge for them. This is how Ampofowaa described her sadness:

I was sad. It pains me I have BP and I am taking medicine which I think and pray it works and now I have to battle with another disease.

Rosemond also had this to say:

I was sad that a poor person like me living on the farms could be struck by the disease. I don't take tea, I go to my farm, return and enjoy some ampesi. I know it is a disease associated with the rich so how come a poor person like me could have this disease. In fact, I have been thinking about it since I was told.

Rosemond was very unhappy about the thought that diabetes cannot be cured completely, and that she just needed to manage it with medications from hospital. The fact that the illness is lifetime saddened her most of the time.

The sadness led to uncontrollable weeping. It was a heart-breaking experience as some patients could not control their emotions. They wept uncontrollably for the pain of coming to deal with a disease for the rest of their lives. At that point, the only option left for them to express their emotions of pain and sadness was to weep. Some wept at home when left alone, and this was the case of Christiana. It was a painful confrontation and she was extremely sad. This is how Christiana expressed her emotion of sadness:

I really wept to the extent that the doctor had to calm me down... I always cried, especially when my husband went to work and I was left alone, I could cry to the extent my eyes reddened and I felt dizzy.

Even during the interviews, patients' narration of their experiences and ordeal with the disease were so emotional that some of them could not control themselves. They broke down in tears at some point, and this made the researcher suspend the interview for some time and ensured that patients were emotionally stabilized before continuing. It was very well understood that discussing and sharing such an experience could be difficult and traumatizing moments for some of the patients.

3.1.3 Inadequate psychological care

It appears most of the patients did not receive adequate psychological care as expressed by 20 out of the 31 participants. Example, Margaret, Victoria and Kwasi shared their experiences:

They did not have time for me. When I got to the consultation room the Doctor just took my lab report.... look at it and asked me to go to the pharmacy to take my drugs (Margaret)
Yes. When they told me about my diabetes status, all that the nurse said was not to eat a particular type of food..... and that is what they mostly do anytime I come for clinic (Victoria)
I was rushed through..... as to what goes on in my mind regarding the disease, we did not discuss during consultation (Kwasi)

3.2 Productive Forces (Positive Reinforcements)

For the positive reinforcements, patients were made to describe the processes they went through in managing and coping with diabetes. Questions asked included how they managed and coped with the disease, and if they felt they were managing their health properly considering the rural conditions they found themselves in, coupled with the challenges. Furthermore, they were asked about the kind of support they received from the family and community. The productive forces were grouped into; resilience, guidance from healthcare providers and support

from family and community members as shown in Table 1.

3.2.1 Alertness and Resilience

Social support seemed to be limited; those who received support were often assisted financially by some family members. Others depended on their grandchildren and children to perform certain chores for them. The support or assistance given to patients was from children, husbands, wives, and siblings. They gave patients financial support for transportation and purchase of drugs. This was the view shared by Abena:

Every support has been from my children... If I need to buy any medicine, I call them to send me money. My children have been helpful.

In some cases, family members saw to the preparation of meals at the right time. Again, few patients mentioned that their children reminded and monitored them to take their medicines, and not to engage in unhealthy behaviours that could complicate the condition. Families and friends served as a source of encouragement for the patients. They encouraged them on the treatment regimen. Despite the strict compliance with medication, diet and lifestyle changes to manage diabetes, some patients still adopted spiritual means to manage the diabetes. They resorted to prayers and fasting as a means of curing diabetes. Patients expressed their hope and faith in God, trusting and believing in Him for healing mercies and also to help them survive. Thus, God is the Supreme Being (supernatural force) who can conquer every ailment. Twumasi had this to say:

I first pray to my God... God is first in everything. The blessing makes one prosperous. God has been good because what I have gone through in life has been through His help... With my medication, I could fast... Yes, I fast. Sometimes at 2pm or 2:30pm I feel as if I have eaten.

According to Twumasi, the fasting sustained his hunger for long periods of time. He narrated that any time he took the medicine, he easily went hungry. On the part of Margret, she often prayed to God that He should hold her, irrespective of the situation because God was her shield.

3.2.2 Guidance and Support

Despite the challenges faced by diabetic patients, they accepted their condition; there was an element of psychological acceptance by the patients. They were ready to go to every extent to manage the disease. Patients accepted the fact that they were sick and therefore had to accept treatment in order to be healthy and live a good life. This was the management strategy by Abena:

What I can say is that no matter what, we are in an evil world. We have already suffered from the illness. So we must take good care of ourselves. How we eat. We shouldn't do unnecessary things but concentrate on the drugs we are taking. We pray you help us get the strength to move and take care of our children. We shouldn't think too much about the illness. If you think about it, it is a worry and it makes your BP rise.

From Abena's account, she no longer thought about the situation because she was used to it. Accepting the condition enabled patients take control of its management by adhering to the prescribed medication and treatment all the time.

Patients ensured that they stuck to the dietary advice given by the health professionals. They did not eat foods they were not supposed to eat, ate on time, and took the right quantity of food. This is what Ampofowaa said: *For what I have been asked not to eat, no matter what I won't eat it.* She ensured that she did not eat from the street but prepared her meals at home. Mannix also added that he was careful with what he ate, and, especially, observing meal times. Two patients engaged in some form of exercises like walking, to keep fit. Adwoa noted that she walked bare footed on gravels every morning. Finally, as part of the lifestyle modification, a few patients were of the view that they were extremely careful with their lives because they did not want to hurt themselves and battle with any diabetes wound.

4. DISCUSSION

Our analyses show that the experiences of individuals' diagnosed with diabetes presents with psychological and emotional challenges consistent with the literature [27]. This could be

attributed to the unproductive forces from the initial reactions of the individual. The unproductive forces constitute the (psychological shock and emotional outbursts) presented as fear and stress are demonstrated during the first stage of the individual reactions after the diagnosis.

The findings revealed that the psychological shock included surprised (shock), fear, frustration, excessive worry, self-blame and suicidal ideations as expressed by one participant whose leg was amputated and had to adopt an alternative lifestyle to manage the situation... *I had a suicidal thought that if I got any poison, I would drink and die* showing signs of hopelessness. These findings are similar to earlier discoveries in the literature [18,19,20,21,22] and a clear demonstration that the thought of helplessness and hopelessness can increase an individual's risk of suicidal behaviours [28] – a feature that is significant in diabetic patients [28,30].

The emotional outburst experienced involved sadness, weeping, and emotional exhaustion which also corroborate with existing literature [18,43]. Both psychological shock and emotional outburst can easily turn a patient's life upside down and often times patients' struggle to accommodate the disease. In other studies these unproductive forces have been presented as excessive worries, disbelieve and self-denial [22,23,24]. Some of these reactions could be the result of total rejection of their diagnosis in the minds of the patients hoping that their diagnosis could be a miss-diagnosis by providers [19,27] hence demonstrating signs of disbelieve when the unexpected diagnosis is given.

The findings showed that the geographical location of people living with diabetes can lead to self-blame (existential questioning) and the literature provides similar experiences from a rural area setting [9]. These psychological reactions were probably due to the fact that patients considered the geographical location in which they found themselves in relation to access to health care from towns or cities, and the economic burden the illness imposed on them. Furthermore, these reactions could be the result of the perception and beliefs patients had about the disease and the idea that it is a life-long condition [22]. Indeed such perceptions can create fear and anxiety in patients and possibly interrupt their daily activities.

The findings show that health care providers did not provide adequate psychological and psychosocial support to enable patients to cope with the distresses which is consistent with the literature [29]. At the facility level, health care providers can concentrate on the physical, social and emotional needs of patients – a practice that has been widely acclaimed in other areas [44] rather than devoting all the time to the technical aspects involved with the treatment [45]. Thus, doctors could immediately refer the patients to a psychologist or counselor for psychotherapy.

This finding highlighted the need to integrate and establish counseling or psychotherapy unit at the various diabetes clinics to help address these psychological and emotional reactions. As part of the essential elements of evidence-based care, proper health education and counseling are needed especially in the management of chronic diseases [46]. Patients must be coached or counseled on the effective ways to deal with their thoughts when they experience emotions of helplessness and hopelessness. This would complement the care given by the diabetes clinics.

Again, it would help build the psychological well-being of patients and heal their psychological wounds. For example, the patient who had the leg amputated and experienced suicidal ideation (depression) would require constant counseling and emotional support. This should not end only at the hospital; follow-up checks at home would have been prudent. The findings showed that diabetes patients living in rural areas managed diabetes through psychological acceptance, and social/spiritual support where patients enjoyed some support (finance, encouragement, reminders) from family members and prayers as shown in the literature [22,27,35,36]. Patients exercised their spiritual faith as a complement to other treatments. Furthermore, patients complied with recommended biomedical requirement, and changed their lifestyle to that effect [35,36].

Psychological and emotional responses accompanied patients' interpretation of the somatic cues or symptoms perception. As part of the support system, a system could be created to send reminders to patients to follow up with the treatment recommendation through the mobile health project (m-health) similar to what is being done in other countries [24]. As a matter of policy, the Ministry of Health and Ghana Health Service could probably adopt the m-health project in which diabetes patients are reminded

to follow recommended treatment (physical exercise, diet, medication, lifestyle changes, and hospital visits) through interactive voice call. This would help reach patients irrespective of their geographical location, and reduce cost

associated with transportation and consultation. The lived experiences of diabetic patients could be represented by the unproductive and productive forces as:

Unproductive forces →

Emotional ['I was afraid because it is scary']

Psychological ['I had a suicidal thought to kill myself']

Inadequate psychological care ['I was only rushed through']

Productive forces ←

Resilience ['for what I have been asked not to eat, I will not eat']

Guidance ['It requires immediate and continuous counseling from healthcare providers but we do not often get them around unless we attend the routine clinics in the regions']

Agility ['I have accepted.....I have to take good care of myself']

Support ['My children have been helpful']

5. CONCLUSIONS

This research question highlighted the psycho-emotional reactions that patients experienced after diagnosis. The study generated themes along productive and unproductive lines to demonstrate the lived experiences of diabetes patients. Psycho-emotional reactions, psychological shock (surprised, fear, frustration, excessive thinking, sadness, emotional exhaustion, suicidal ideation, and self-blame) and emotional outburst (sadness, weeping and emotional exhaustion) constitute the unproductive forces. This caused some of the patients to express suicidal ideations at the extreme point during the first stage of their reaction to the news of being diagnosed as diabetes patients. The study concludes that individual resilience and disposition, guidance and support from care providers, family and community members constitute the productive forces which provide an appropriate framework for psychosocial care for diabetes patients. Finally, patients appraised or evaluated the management strategies adopted to see how they had effectively controlled the disease.

6. RECOMMENDATION

There is the need to establish and integrate counseling or psychotherapy units at the various diabetes clinics to help address patients'

psychological and emotional needs. This is because proper health education and counseling are needed, especially in the management of chronic diseases. The units will be able to counsel patients on effective ways of dealing with their thoughts when they experience feelings of helplessness and hopelessness. This would complement the care given by the diabetes clinics. Again, it would help build patients' psychological well-being and heal their psychological wounds. As part of the measures to improve patients' psychological well-being, there must be follow-up visits on patients, especially those who express severe psychological and emotional distresses in order to avert any extreme depressions.

CONSENT

Participants were provided with a written consent before the start of the face-to-face interview after the researcher had explained to them the purpose of the study and the benefits they would gain from the study. Each respondent was informed of his/her right to withdraw from the study any time without suffering any negative consequences. Thus, they were constantly reminded during the interview that their participation was voluntary, and that they had the option to quit at any point in time if they were not comfortable with the line of questioning. Names of the respondents were not included in the study

report. In order to conceal the identity of the participants, pseudonyms were used to represent the names of participants' identities throughout the study. All information gathered from study participants was treated confidentially. It was explained to the participants that some minimal emotional risk might be involved. This is because participants were asked for detailed accounts of their experiences that might be unpleasant.

ETHICAL APPROVAL

Before data collection, ethical clearance was obtained from the University of Cape Coast Ethical Review Board to ensure and safe guard every ethical consideration of the participants. Each of the hospitals selected also granted permission for the researcher to collect data.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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