INFLUENCE OF PSYCHOLOGICAL AND DEMOGRAPHIC FACTORS ON RESILIENCY OF TYPE II DIABETIC PATIENTS IN IBADAN, NIGERIA

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ABSTRACT

Theoretical reviews have established link between psychosocial factors and resilience among diabetics. However there is dearth of empirical findings with regards to the specific role psychodemographic factors play on resiliency of type 2 diabetic patients. Consequently, the study aimed to investigate the role psychodemographic factors play in strengthening the recovery process of people living with type 2 diabetics. The study adopted a cross-sectional survey design. A total of 79 type 2 diabetic patients were selected using the purposive sampling technique from three (3) hospitals in Ibadan North LGA. The study participants comprised of 37 (47%) males and 42 (53%) females with mean age of respondents as 51.19 and standard deviation of 17.56. Data were collected through a questionnaire consisting of standardized scales that measured the study variables. Results from multiple regression analyses revealed that perceived vulnerability had significant joint prediction on resilience [F (1, 78) = 23.85; p<.01; R^2 =.23]. One-way ANOVA revealed that diabetics with low and high social support significantly reported higher resiliency than diabetics with moderate social support [F (1, 77) = 5.122; p<.05]. Chi-square analysis showed significant association between gender and resiliency [X (1) =0.017; p<0.05] and education and resiliency [X (2) =0.010; p<0.05]. From the findings of the study, perceived vulnerability has predictive utility on resiliency of diabetics and high social support also impacts more than other levels of support on resiliency. Therefore, need exist on the part of clinical health practitioners who are involved in the care and management of diabetics to work on patient's perception of risk and as well try to encourage the strong need for social support and network implicated to diabetics adjustment and leading of normal life.

Keywords: *Perceived vulnerability, Social support, Demographic factors, Resiliency and Type II diabetic patients*

INTRODUCTION

Several terminologies are been used to express the concept of resiliency in psychology some researchers refer to resilience as "psychological resilience", "emotional resilience", "hardiness" and "resourcefulness". In the same regard, as terminologies differ to capture the concept of human resiliency, the conceptualization of resilience among scholars also varies. Many scholars opine that resiliency is a positive capacity that helps people to face stressful and adverse situation. Resilience therefore involves assets and resources within an individual, life and environment that facilitate the capacity for adaptation and bounciness when faced with adversity (Windle, Bennert, & Noyes, 2011). Similarly, Wolin & Wolin (1993) defined resiliency as the capacity to bounce back, to withstand hardship, and to repair oneself. Arguably, resiliency is the process of dealing with disruptive, stressful, or challenging life events in a way that provides the individual with additional protective and coping skills than prior to the disruption that results from the event. As a positive adaptation skill, resilience is viewed as a behavioural competence at handling any particular tasks or challenges at a specific stage of life (Luthar & Cicchetti, 2000; Richardson, 2001). To put more succinctly, resiliency is that inner capability of an individual to overcome life challenges (trauma, personal crises, tragedy etc.) and then bounce back to normalcy, stronger and even more powerful. Irrespective of the terminology used there appears to be consensus in its definition as a unique quality that helps people face adversities.

Specifically some researchers have explained resiliency as the "process of self growth" when faced with chronic illnesses. Resilience, or the capacity to rebound from adversity, strengthened and more resourceful, is an important quality for dealing with chronic diseases (Sutcliffe & Vogus, 2003) and exemplifies a characteristic of resistance to future negative life events such as in cancer, HIV/AIDS, diabetes etc. In a study conducted by Masten (1998) resilient individual's are people with high-risks propensities, who in the long run have had better

outcomes than expected, individual's with better adaptations despite stressful experiences and recovery from trauma. In this sense resilience corresponds to cumulative protective factor and is used in opposition to cumulative risk factor. Masten (1998) explained that resilience must be viewed as interplay between certain characteristics of the individual and the broader environment, a balance between stress and the ability to cope, and a dynamic and developmental process that is important at life transitions. It appears thus that knowledge about resilience will be insightful to understanding changes in diabetic patients which have strong implications on their psychological and physical well-being.

Diabetes is a global health issue in adults as well as in children that is widely spread across countries of the world today. Diabetes clinically is a non communicable disorder but diabetics as a group are at increased risk of disease states such as heart diseases, blindness, nerve disorders, kidney diseases, gangrene etc. The world health organization (WHO, 2008) estimated that the number of people with diabetes will increase from 171 million to 366million between 2000 and 2030 worldwide. This estimated increase in the number of people with diabetes will inadvertently also contribute to the risk of more complications and health burden in this population if they are unable to harness the unique personal strength they possess to fight this condition.

In Nigeria, crude prevalence or estimates for diabetes mellitus is around 7% with an estimated 10 million people suffering from the disease. The prevalence in sub-Saharan Africa is expected possibly to triple as well by 2030 (Nyenwe, Odia, Ihekwaba, Ojule, Babatunde, 2003), making it a cause for concern of not only health professionals but also policy makers as they are expected to initiate and put in place strategies to tackle this epidemic. Globally, the incidence and prevalence of type 2 diabetes is growing at a geometric rate as opposed to type 1 diabetes. Type 1diabetes, often diagnosed in children and youth, is a disease in which the body does not produce insulin, thus requiring regular insulin administration and adjustment to mimic the function of the pancreas. Type 2 diabetes on the other hand can develop at anytime but often develops in adulthood, is much more common and is marked by insulin resistance, in which the body produces insulin but does not process it sufficiently. In which case more often than not type 2 diabetics are usually faced with the challenge of dealing with the new discovery or knowledge that they have a non-communicable disease that is quite demanding and they are expected to live with all the rest of their lives because there is no known cure yet for the condition.

Identifying the psychodemographic factors that account for variances in the resiliency of type 2 diabetic patients may be advantageous for one reason because it will aid prevention processes were possible and also be useful in planning of intervention programs were needed that are targeted at improving the resiliency of the patients with additional possibility for better quality of life and diabetes outcome. From theoretical review of the extant literature, some of the factors linked to resilience among diabetics range from psychological, biological, cognitive emotional, behavioural factors to cultural, social, family related, disease related, economic related and treatment related factors. However little empirical attention has been paid to the psychological and demographic factors the study therefore gives credence and attention the psychodemographic variables with potentials for impacting resiliency of Type 2 diabetics. Taking cognizance of the psychological factors that can influence non- communicable disease patients the concept of perceived vulnerability has been implicated as Schaller & Duncan (2007) posit that many phenomena in the realm of social cognition are influenced by the temporary salience of disease and by individual differences in chronic concerns about disease transmission.

Thus, perceived vulnerability also referred to as risk perception in other context can be viewed as a psychological predisposing factor of susceptibility arising from concerns exhibited in the course of dealing with a chronic illness. The import of this assumption is that phenomena with regards to health, many of which may not be directly disease-relevant, such as in this case resiliency to chronic illnesses may be uniquely predicted by patients individual differences in perception of vulnerability.

Another factor of importance to resiliency in chronic life illness such as diabetes is social support. Social support refers to a variety of material and emotional supports a person receives

from others or put differently, as information from others that one is loved and cared for, valued and part of network of communication and mutual obligations. There is growing evidence from review of the literature that personal adjustment and social behaviour, as well as health maintenance and recovery from illness, can be influenced significantly by a person's access to supportive others (Henderson, 2007).

Whether the perception of vulnerability and social support would influence resiliency in the Nigerian context among diabetics remains largely theoretical with little empirical studies existing to back up these assumptions. Most of the study conducted among diabetics focus mainly on their physical health with lesser concerns for the psychological processes involved in their recovery. Exploring the relationship that exists among perceived vulnerability, social support and resiliency of Type 2 diabetics becomes expedient and imperative. Rutter (1985) accentuated that linking psychosocial resources and psychological interventions can elucidate the "why" and "how" of diseases and recovery among health related problems or chronic illnesses. However, despite the passing of two decades since Rutter's original statement, little progress has been made in the understanding of these mechanisms. The aim of the study therefore is to narrow the gap in literature by providing context specific empirically answers to the role that psycho-demographic variables play in resiliency of Type 2 diabetics by answering the following research questions;

1. Will psychological variables of perceived vulnerability (Infectability and germ aversion) predict resiliency of diabetic patients?
2. Will the levels of social support significantly influence resiliency among diabetics?
3. Will gender, age and education be related with resiliency among diabetic patients?

The main objective of the study is to investigate the role of psycho-demographic variables on resiliency of type 2 diabetes patients. Specifically, the study made effort to:

1. Explore the role of perceived vulnerability (Infectability and germ aversion) in predicting resiliency among type 2 diabetes patients.
2. Explore the impact of social support in the resiliency of type 2 diabetes patients.
3. Examine the relatedness of gender, age and education with resiliency of type 2 diabetes patients.

LITERATURE REVIEW

The study's theoretical leaning from the literature was founded on the health belief model to explain resilience among diabetics. The health belief model (HBM) was one of the first, and the best cited social cognition models related to health. It is a health behaviour change and psychological model developed by Rosenstock (1966) for understanding and promoting healthy behaviour among patients and the uptake of health services. The model was furthered by Becker and his colleagues in the 1970s and 1980s. Subsequent amendments to the model were made at around 1988, to accommodate evolving evidence generated within the health community about the role that knowledge and perceptions play in personal responsibility of an individual in the care and management of their health. Originally, the model was designed to predict behavioural response to the treatment received by acutely or chronically ill patients, but in more recent years the model has been used to predict more general health behaviours. The HBM suggests that your belief in a personal threat together with your belief in the effectiveness of the proposed behaviour will predict the likelihood of that behaviour. In line with this model perception of vulnerability by and individual would predict the resilient nature an individual faced with Type 2 diabetics would exhibit.

According to Health belief model (HBM), the likelihood that someone will take action to prevent illness depends upon the individual's perception that he or she is personally vulnerable to the condition, the severity or seriousness of the condition and that the benefits of reducing the threat of the condition exceed the costs of taking that action (Glanz, Rimer, & Lewis, 2002).The model has undergone some modifications since its original formulation. The model's four key components are conceptualized as perceived; susceptibility, severity, effectiveness, and cost. From an HBM perspective, the likelihood individuals will engage in precautionary behaviours to recover from illness such as diabetes (e.g., quit smoking, eat a diet low in fat and

high in fibre, exercise, adhere to medication) depends on how much they believe they are vulnerable to or at risk of complications from the illness. In general, it has been found that people tend to underestimate their own susceptibility to disease.

The protection motivation theory (Rogers 1983) was originally developed to explain how people respond to fear-arousing health threat communications or `fear appeals. Protection motivation theory (PMT) refers to the motivation to protect oneself against a health threat. Of the determinants of intention specified by the model, the major aspects that have received the most empirical attention are vulnerability and severity, response efficacy, and perceived self-efficacy. PMT is unique among social cognition models with respect to the relatively large number of experimental tests that have been conducted. In PMT, perceived vulnerability is an important component of threat appraisal, suggesting that people actively engage in a process of determining their level of risk. According to Couzos, O'Rourke, Metcalf & Murray (2003), risk factors are the most important elements in the theory of resilience and these factors can negatively affect development and can heighten the likelihood for poor outcome in coping with stressful life events.

Empirical investigations in this area indicates that perception of risk predict negative outcomes on specific health outcome criteria (Masten and O'Dougherty, 2010). Several scholars emphasize that personal or individual differences in chronic illness concerns can predict behavioural concepts such as attitudes towards ill patients, health outcome and quality of life (Park, Schaller, & Crandall, 2007). Evidence demonstrates that those diabetics who have higher levels of social support have lower level of diabetes challenges and better health than those who have lower levels of support (Willis, 1998) and that protective factor such as social support tend to work to counteract risk factors and can thus promote healthy development and positive long term adjustment (Couzos, 2003). Implicated also in literature is the role that demographic characteristics play in ensuring resilience among individual's with chronic illness and psychological distress (Bariola, Lyons, Leonard, Pitts, Badcock & Couch, 2015). Consequently, from the foregoing review of the literature the following hypotheses have been construed:

Hypothesis 1: Perceived vulnerability (Infectability and germ aversion) will significantly predict resiliency among type 2 diabetes patients.

Hypothesis 2: Diabetic patients with high social support will significantly report higher on resiliency than type 2 diabetes patients with low or moderate social support.

Hypothesis 3: Gender, age and education will have positive significant relationship with resiliency among type 2 diabetes patients.

METHODS

Research design

The study design was a cross-sectional survey adopted to investigate and evaluate the psychological factors of perceived vulnerability, social support and demographic factors (gender, age and education) that influence the resiliency of diabetic patients. The independent variables of the study were perceived vulnerability, social support, gender, age and education while the dependent variable of the study was resiliency. The psychological variables were measured in a continuous form however for analysis purpose social support was also categorized while the demographic variables are categorized data.

Setting

This study took place in Ibadan the capital of Oyo state, Nigeria and also the largest city in West Africa. Data was obtained from the MOPD of the specialist and medical centres of three private-owned hospitals in Ibadan North Local Government Area (LGA), Oyo state. The participants in this study were purposively selected from the hospitals within Ibadan North LGA when they attend their clinic appointments.

Participants

Study participants consisted of diabetic patients receiving treatment at the Medical out-patient department (MOPD) of three private owned hospitals in Ibadan North LGA, Oyo state. Sample size obtained in the study was 79 diabetic patients in Ibadan North, 37 (46.8%) were males and 42 (53.2%) were females. The mean age of participants in the study was 51.19 with standard deviation 17.56. Participants whose age was above the mean age were 46 (59.0%) while those whose age fell below the mean age were 32 (41.0%) in number. The total number of singles were 7(8.9%), 60 (75.9%) were married, 1(1.3%) participant was divorced and 11 (13.9%) were widowed. Based on ethnicity, 52 (65.8%) were Yoruba, 9 (11.4%) were Igbo, 4 (5.1%) were Hausa and 14 (17.7%) fell within other ethnic groups. In this study, 17 (21.5%) of participants had primary education, 20 (25.3%), had secondary education and 42 (53.2%) had tertiary education. Participants who agreed that they had a family member who had suffered from diabetics were 34 (43%) while participants who disagreed to having diabetics present in their family history were 45 (57%). Participants whose diabetics diagnosis were below 5 years were 45 (57.0%) while participants whose were 5 years and above were 34 (43.0%).

Instruments

Data was collected with the use of self report structured questionnaire comprising of a total of 40 items, divided into 4 sections (A-D);

SECTION A: Demographic data of 7 items was assessed, and they include, age, gender, marital status, ethnicity, highest level of education, family history of diabetics, and duration of illness.

SECTION B: consists of a 6 item Brief resilience scale developed by Smith, Dalen, Wiggins, Tooley, Christopher & Bernard (2008). It has a response pattern of a 5-Likert format ranging from “strongly disagree”-1 to “strongly agree”- 5, items 2, 4, and 6 are reversed items. The authors established norms for the scale are Mean= 2.91 and the SD=.74, scores below the mean shows lack of resilience while scores above the mean indicates resilience. The authors reported that internal consistency was good, with Cronbach’s alpha ranging from .80–.91. Convergent validity and discriminant predictive validity were also reported by Smith et al. (2008) as part of the validation analysis was also good. In this study the mean and standard deviation on the brief resilience scale was 3.61 and 0.72 respectively, with Cronbach alpha of .62 with scores above the mean signifying high resilience and vice versa.

SECTION C: consists of 15 item scale measuring perceived vulnerability developed by Duncan, Schaller and Park (2009). Response format is 7 Likert scale format ranging from “strongly disagree”-1 to “strongly agree”-7, items 3, 5, 11, 12, 13, and 14 are reverse scored. This scale has two subscales; Infectability and germ aversion. The author reported Cronbach alpha= .82. To determine the validity of the scale, four methods were employed, being content validity, item correlation with the total score, analysis of the correlation between subtests, and the total score were used. For the overall scale, scores above the mean signifies high perception of risk while scores below the mean indicates low perception of risk. In this study the overall mean and standard deviation for perceived vulnerability was 3.39 and 0.84 respectively with Cronbach alpha of 0.68.

SECTION D: consists of 12 item Multidimensional Scale of Perceived Social Support developed by Zimet, Powell, Farley, Werkman & Berkoff (1990), it is a 7- point Likert scale ranging from 1- very strongly disagree to 7- very strongly agree. The overall scale mean=5.80 and SD =0.86, and reliability of the total scale is 0.88. Overall score on the scale ranging from 69-84 shows high acuity of social support, 49-68 shows moderate acuity of social support while scores from 12-48 indicates low acuity of social support. In this study, the overall scale mean was 5.42 and standard deviation was 1.12 with Cronbach alpha of 0.88.

Procedure

A written clearance was obtained by the researcher from the Department of Psychology, University of Ibadan to the concerned health institutions and individuals. The researcher also applied to obtain approval from the Bioethics committee of UCH to ensure that participant's protection is upheld. Permission to conduct the study was granted by the Ethics Committee of the O.L.A Catholic hospital, Oluyoro, Oke-Offa, Ibadan North LGA with ethical number: OCH/EC/14/15. The cooperation of all the health workers (Doctors, Nurses, and Health records officer) in the department was sought for smooth running of the study. Administration of the questionnaire was based on the language favoured by the patients (English / Yoruba). The questionnaire was translated to Yoruba because that was the predominant language of the people in Ibadan.

Participants were briefed about what the study entails and that participation in this study was completely voluntary and participants were free to withdraw from the study at any time during the course of the study without comment or penalty. Only participants who were willing to sign the informed consent form responded to the structured questionnaires which took about 25- 30 minutes to be completed. Of the 100 questionnaires administered to the patients 76 were properly filled accounting for 76% response rate. Descriptive and inferential statistics including Multiple regression, Chi-square and One-way ANOVA were used in analyzing the data.

RESULTS

From the preliminary analysis Table 1 shows the descriptive nature of the study's participants, males who were diabetic was 37(46.8%) and their mean score on resilience was 1.11, while females were 42(53.2%) and their average score on resilience was1.33. The mean age of participants in the study was 51, with 46(59%) diabetics at or above 51years of age with an average score of 1.24 on resilience. Diabetics in the study whose age was below 51 were 32(41%) and their average score on resilience was 1.22. Participants with primary education were 17(21.5%) with average score on resilience as 1.41, while those with secondary education were 20(25.3%) with mean score on resilience as 1.35. Participants with tertiary educational attainment were 42(53.2%) and their average score on resilience was 1.09.

Table 1: Summary of the descriptive characteristics of the study's respondents showing the demographic and psychological variables

Variables	N(percent)	Resilience	
		$\bar{x}$	SD
GENDER			
Male	37(46.8%)	1.11	0.31
Female	42(53.2%)	1.33	0.48
AGE			
<51years	32(41%)	1.22	0.42
≥51years	46(59%)	1.24	0.43
EDUCATION			
Primary	17(21.5%)	1.41	0.51
Secondary	20(25.3%)	1.35	0.49
Tertiary	42(53.2%)	1.09	0.30
PERCEIVEDVULNERABILITY			
Low	43(54.4%)	3.74	0.83
High	36(45.6%)	3.47	0.54
SOCIAL SUPPORT			
Low	18(22.0%)	4.19	0.86
Moderate	35(44.3%)	3.40	0.64
High	26(32.9%)	3.75	0.68

HYPOTHESIS ONE: Infectability and germ aversion will significantly predict resiliency among type 2 diabetes patients.

Table 2: Summary multiple regression analysis showing the joint and independent influence of perceived infectability and germ aversion on resilience

Independent variable	R	R^2	F	p	β	t	p
Infectability	0.48	0.23	23.85	<.01	-0.47	-4.884	<.05
Germ aversion					-0.05	-0.430	>.05

Table 2 shows that infectability and germ aversion had significant joint influence on resilience [F (1,77)= 23.85; p<.01; R^2 = .23]. This implies that 23.6% of the total variance of resilience is accounted for by the linear combination of infectability and germ aversion. Based on this result it can be concluded that there was significant joint contribution of infectability and germ aversion on resilience. Table 2 also shows that only infectability (β= -0.47; t= -4.884; p<.05) had a significant independent contribution to the prediction of resiliency. Conversely, germ aversion did not significantly contribute to the prediction of resiliency among Type 2 diabetics. Therefore, the hypothesis is partly confirmed.

HYPOTHESIS TWO: Diabetic patients with high social support will significantly report higher on resiliency than type 2 diabetes patients with low or moderate social support.

Table 3: Summary of One-way ANOVA showing influence of social support on resilience among Type II diabetics

	SS	Df	MS	F	p
Total	39.864	78			
Between groups	4.735	2	2.367	5.122	<.05
Within groups	35.129	76	0.462		

Table 3 shows that social support (high, moderate and low) significantly influence the resilience of diabetic patients [F(1,77)= 5.122;P<.05]. To test the hypothesis however that low social support diabetics will score higher on resilience than diabetics with high or moderate social support a Post hoc test was conducted.

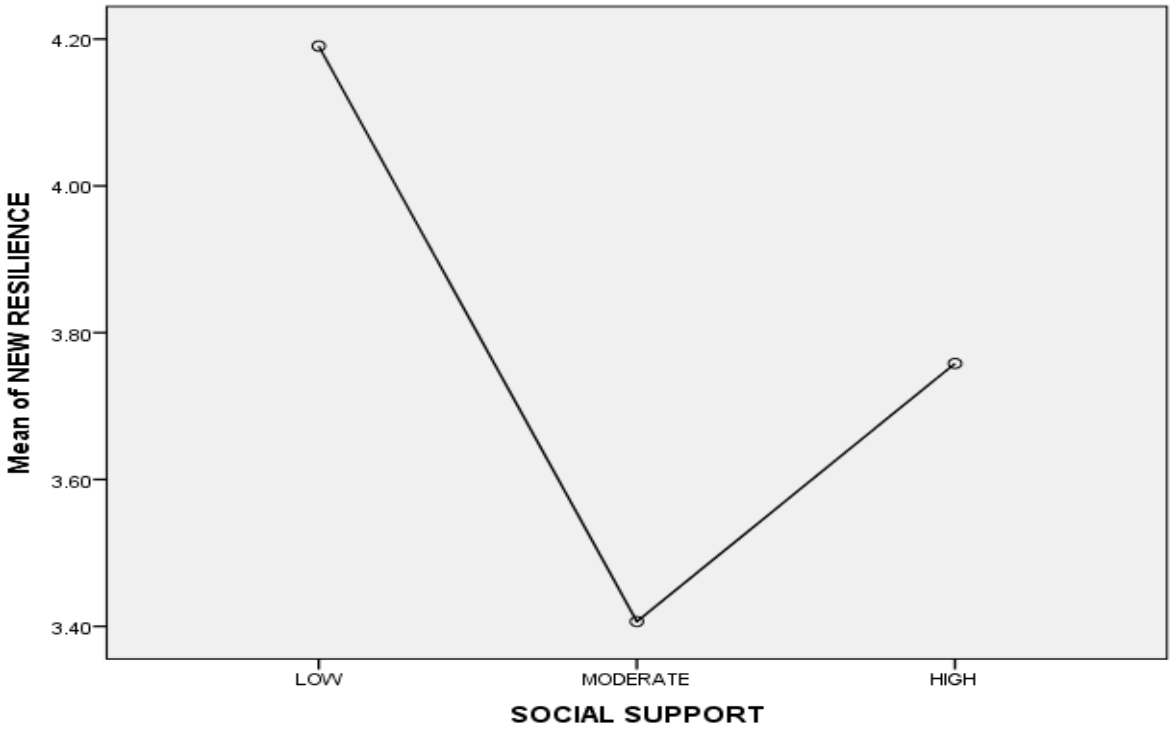
Table 4: Scheffe post hoc test showing that low social support scored higher on resilience than moderate or high social support

	1	2	3	N	$\overline{X}$	Sd
Low	-			18	4.19	0.86
Moderate	0.78*	-		35	3.40	0.64
High	0.43	0.35	-	26	3.75	0.68

Note: *=p<.05

Table 4 indicates that diabetics with low social support significantly scored higher on resilience than diabetics with moderate or high social support. From Table 1 diabetics with low social support ($\overline{X}$ =4.19) scored higher on resilience than diabetics with moderate social support ($\overline{X}$ =3.40) and diabetics with high social support ($\overline{X}$ =3.75). Further analysis to ascertain the direction of differences was done and from the result in table 6 it was observed that diabetics with low social support significantly scored higher on resiliency than diabetics with moderate social support. However no significant difference was found for diabetics with low social support and high social support on resiliency. A pictorial representation of this finding is presented in Figure 1 showing the differences in resiliency based on the level of social support reported by Type 2 diabetic patients.

Figure.1: Showing that low and high social support influence resilience more than moderate social support.



HYPOTHESIS THREE: Demographic variables of gender, age and education will have positive significant relationship with resiliency among type 2 diabetes patients.

Table 5: Summary socio-demographic variables of gender, age and education significantly associating with resilience

VARIABLES	N	RESILIENCE Low	RESILIENCE High	df	χ	Phi Coefficient
GENDER						
Male	37(46.8%)	33(54.1%)	4(22.2%)	1	<.05	.268
Female	42(53.2%)	28(45.9%)	14(77.8%)			
AGE						
<51 years	32(41%)	25(41.7%)	7(38.9%)	1	>.05	.024
≥51years	46(59%)	35(58.3%)	11(61.1%)			
VARIABLES	**N**	**RESILIENCE Low**	**RESILIENCE High**	**df**	χ	**Cramer's V**
EDUCATION						
Basic	17(21.5%)	10(16.4%)	7(38.9%)			
Secondary	20(25.3%)	13(21.3%)	7(38.9%)	2	<.05	.341
Tertiary	42(53.2%)	38(62.3%)	4(22.2%)			

Table 5 shows that the hypothesis that there will be a significant association between the gender, age, and educational attainment on level of resiliency was partially supported. Significant gender difference on resiliency was obtained (χ (1)=0.017; p<0.05). In this study more females were high on resilience than males. In the same light, more males were low on resilience than females (see Table 1). The phi coefficient showing the amount of contribution gender has on resilience was 0.268, this implies that gender contributes 26.8% to the variation in resilience of Type 2 diabetics.

Table 5 also revealed a significant association in resilience based on educational level (χ (2)= 0.010; p<0.05). This implies that significant relationship based on educational attainment is

observed in the resilient nature of Type 2 diabetics. In this study there were very few diabetics with tertiary education who had high resilience when compared with diabetics with secondary or basic education. Also the table revealed that more diabetics with tertiary education were low on resilience compared to those with primary and secondary education (see Table 1). In this study a Cramer's V value of 0.341 was obtained on educational level, this implies that education contributed 34.1% to the variation observed in resilience of diabetics. However no significance difference was observed between the levels of age and resiliency.

DISCUSSION

The goal of this study was to examine the influence of demographic variables (age gender and education) and psychological variables (perceived vulnerability and social support) on resiliency of type 2 diabetics. The result from the findings of the study was that psychological variables of perceived vulnerability that is infectability and germ aversion significantly jointly predicted resilience among Type 2 diabetics. However, only infectability independently predicted resilience among Type 2 diabetics accounting for 48.6% variation in resilience. This implies that perception of risk is a major predictor of resilience among diabetics especially patients perception of susceptibility to infections. The finding of this study is in line with previous studies on risk perception, Couzos et al. (2003) affirms that risk factors are the most important elements in the theory of resilience and these factors can negatively affect development and can heighten the likelihood for poor outcome in coping with stressful life events. Patients understanding of their diseases called disease perception or disease condition as perceived by the patient are formed based on various sources and patient's belief (Afshar, Bagherian, Foruzandeh, Horamian, Daghaghzadeh & Adibi, 2011). When a disease is diagnosed for a person or a person suffers from injuries, he tries to imagine a cognitive scheme of disease to define the disease for himself. This perception of disease is of importance in directing coping strategies and specific behaviours associated with disease such as adherence to treatment (Botha, Riyazi, Kroon, Scharloo, Houwing-Duistermaat & Slagboom, 2006). Generally, studies including the present study has shown that there is an inverse or negative linkage between perception of risk and level of resiliency which implies that the higher the perception of risk the lower the resiliency of the individual. This finding has implication for patients' disease progression and untoward recovery.

Findings of the present study revealed that diabetics with low social support will significantly score higher on resilience than diabetics with moderate or high social support was confirmed. From the results presented social support (low, moderate and high) significantly influenced resilience. More importantly, it was identified that diabetics with low social support did not significantly score higher on resilience than diabetics with high social support. However diabetics with low social support significantly scored higher on resilience than diabetics with moderate social support, partially supporting the hypothesis stated. This study finding is in accordance with very few researches, as Sun & Stewart, (2007) have argued that cultural and societal factors often influence people's health control beliefs. It is suggested that in cultures that assume significant others like family members as responsible in making health care decisions and interventions, people's belief of significant others' control is predominant, which invariably determines health behaviours and outcomes. In other cultures, people's main control belief may orient towards 'spiritual or supernatural phenomenon'. On the other hand, this study finding is not in accordance with some other literature, as several studies believe the effect of social support on resilience is widely accepted. Studies have shown that resilient individuals were more likely to have more social support than non-resilient individuals. Moreover, those with high social support were 40% to 60% more resilient than those with low social support (Netuveli, Wiggins, Montgomery, Hildon & Blane, 2008). This study however was also able to make distinction between low resilience, moderate and high resilience. People with either low or high social support were more resilient than people with moderate resilience.

The research question which states that gender, age and education will significantly associate with resilience of diabetics, was confirmed. The findings of the study revealed a significant relationship between resiliency and gender. This report implies that significant association based on gender differences is observed in the resiliency of diabetic patient. In this

study there were more female diabetics who had high resilience when compared with male diabetic's patients. Also the table revealed that more male diabetics were low on resilience compared to female diabetic patients. From Table 5 it was observed that gender contributed 26.8% to the variation observed in resilience of diabetic patients. Also findings revealed a significant difference in resilience based on educational level. This implies that significant difference based on educational attainment is observed in the diabetic patient resilience. In this study there were more diabetics with secondary or basic education who were high on resilience when compared with diabetics with tertiary education. Also the table revealed that more diabetics with tertiary education who were low on resilience compared to those with basic or secondary education. The table also showed that education accounted for 34.1% variation in the resilience of diabetic patients. However no significance difference was observed based on age and resilience. In line with the findings of the present study, previous study on individuals with type 2 diabetes reported a sex difference in the association between health outcome and glycemic control, showing a stronger effect for men versus women (Cherrington, Ayala, Amick, Scarinci, Allison, & Corbie-Smith, 2008). However in our own study females were observed to be more resilient towards their health than males. This variation in favour of the female sex could be as a result cultural differences and sex roles. In our culture females are often exposed to a lot of adverse experiences due to gender disparity that makes the females more competitive and accrue to them more strength to challenge authority if their views are to be held or recognized, this same strength is transferred into the area of health.

CONCLUSION

This study was able to identify and establish relationship of psychological and demographic variables in the preservation of positive health outcome and diabetic management, with focus on resilience among this group of people. This significant gap filled by the study by providing evidence based information about diabetic patient is relevant since working with people's strengths and fostering self-care and positive adaptation is central to contemporary healthcare delivery. In general, this study finding suggests that our research and clinical encounters for people with diabetes should equally focus on what is going on well (strengths) as opposed to focus on only the areas that need improvement. Fostering resilient behaviours is an area for further development in patients suffering from diabetics. More specifically, clinicians and researchers should target positive areas in addition to deficits during intervention planning for this set of people. Much work is left to be done in achieving these specific goals from both clinical and research area. However, this study is a step in the right direction as it emphasizes the significant progress made thus far and shows that indeed focusing on what works is the right track toward optimizing better health outcomes among patients who are chronically ill.

This study therefore recommends that awareness on the significant role that social support plays in helping diabetics to deal with illness should be emphasized by health workers, government agencies and even Non-governmental organizations. Community social support will be beneficial to the management of diabetics as a lot of participants identified that financial constraints is the major problem they have to cope with in the course of treatment. Policies to subsidize medications and laboratory testing to show that the society also cares for them will be imperative in the management of persons with diabetes. Family social support has been implicated also with high social support relating more with resiliency among Type 2 diabetics.

From a health care perspective, regular clinical observation of both patient and family members will help in identifying on time individuals with psychological problems requiring attention. This assessment of patient will serve as a useful pointer to helping professionals in making informed judgement about treatment and to determine the focus of intervention to be adopted for dealing with patients who are low on resiliency. For such persons psycho-education and resiliency intervention will be useful educational tools in improving the individual's sense of empowerment, understanding and self-management skills.

Despite the benefits of study to the body of science, this study has some obvious limitations that future studies can work upon in other to ensure external validity the sample size should be increased and be more representative. And to ensure better internal validity efforts

should be geared at controlling extraneous variables that could contaminate the findings of the study. The study was also unable to capture other variables of relevance to resiliency such as socioeconomic status, personality attributes, and other clinical conditions. Therefore further studies are required to support the outcome of the present study and are encouraged to work on the limitations of the current study so as to increase validity of findings.

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