

Family and Social Support Systems on Patients' Readmission: Perceptions of the Elderly Diabetic Patients at San-Fernando General Hospital

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Abstract:

Aim: The purpose of this study is to determine if family and social support play a part in the readmission of the elderly diabetic patients at San Fernando General Hospital.

Methodology: A cross-sectional descriptive quantitative study was undertaken among the readmitted elderly diabetic patients at San Fernando General Hospital. It was carried out among the 35 patients who consented and volunteered to participate in the study. Structured closed ended statements were used to elicit their responses on the research issue. Face-to-face interviews, using the same structured questionnaire, were conducted with the elderly who were not able to write. Some were assisted by their close relatives. Analysis was done with the aid of the SPSS programme.

Results: Results show that the elderly were mixed in racial composition, mostly males, widowed, and most have been admitted more than 3 times. They also show some significant relationships between some of the social and family factors; and readmission.

Discussion: The implication of the findings are discussed in the context of literature.

Keywords: Diabetes, Elderly, Caribbean, Readmission.

I. Introduction

The hospital readmission among the elderly is an intricate problem that is continuously being seen as a dilemma according to Robinson¹ and their admission to hospital are caused by risk factors such as age and having socio-economic problems^{2 and 3}.

Recent and past studies on family and social support in the elderly diabetic patients have found that there are various benefits as they relate to the number of health-related variables affecting this population^{4, 5, 6 and 7}. However family and social support can buffer the psychosocial effects of a wide range of stressors that affect the elderly⁸. Diabetes is one of the most prevalent diseases to affect human beings worldwide, including the elderly. It is especially challenging for the elderly taking into consideration the pathophysiology that accompanied the ageing process and the decreased availability of financial resources.

There are links between family and social support and health which increases as one ages and the elderly tend to need more assistance from family members and friends with aspects of daily living e.g. washing or taking a bath, help with eating and with remembering to take the correct dose of medication⁹.

In the Chinese culture, when respect and care for the elderly are instilled into their culture, automatically it is delivered to the elderly patient whenever it is needed, making this social tradition a way of life¹⁰.

Diabetes has been purported to be a family affair because when one member of the family becomes affected with the disease, all other members have a role in ensuring that the individual adheres to treatment, diet and lifestyle changes¹¹. Family support has been contextualized into family relationships, marital relationships and support networks. The elderly must often deal with multiple losses such as death of spouse, other family members and friends, changes in function and roles (e.g., retirement), and fears about mortality. Diabetes and its complications can exacerbate the difficulties associated with each of these transitions leading to feelings of loneliness and despair.

It has been acknowledged that family support is a critical component of self-care for people with diabetes, in everyday management of the disease and also in times of crisis and family support has been shown to be associated with improved patient outcomes^{12, 6 and 8}.

In Ireland, emphasis is on the need for family support in their everyday care of elderly diabetics s emphasied¹³ while in China, children are obligated to take care of their parents^{8, 10}. On the other hand social support is "an exchange of resources between (at least) two persons, aimed at increasing the wellbeing of the receiver"¹¹. Also, social support has a multidimensional approach that include emotional, tangible, informational, and companionship. Emotional support, sometimes called non- tangible support refers to the action people take to make someone else feel cared for¹¹.

Social characteristics such as race, gender and education are believed to be associated with the disparities in health that affects ones coping mechanism^{12, 13}. From a local perspective, in Trinidad and Tobago, Indo-Trinidadian are more susceptible to diabetes than their African counterparts¹⁴.

Social support affects behaviour especially in coping with a disease that requires a lifelong management of drug therapy, diet and lifestyle changes¹⁵. Support is a multifaceted experience that involves voluntary association of formal and informal relationship with others such as family, friends, groups or professionals. It is a value that is placed on one's self-esteem, self-concept and self-worth. Further stated that humans are social beings who need that sense of belonging; without it, there is tendency to become depressed, express anxiety and feel hopelessness which all rebound on physical health. In addition, social support is frequently a resource for individuals coping with stress⁵. Social support may be derived from spousal relationships or family members as well as from relationship with friends, coworkers and other social groups. Researchers at the School of Medicine and Health Sciences, Monash University, Malaysia, asserted that social support is an unrealized and underutilized potential that can be used as both an effective and cost effective modality in the war against the epidemic of persons living with Type 2 Diabetes. There has been a shift in the model of management of diabetes from the conventional physician- centered model to the current patient-empowered model; authors stated that this plays an essential role in the management of persons with type 2 diabetes.¹⁵

Economic resources are a well- documented social determinant of health and are considered one of the 'fundamental' hallmarks. In addition to individual resources, collective resources impact access to conditions that promote a healthy lifestyle. Poverty has been highlighted as a stumbling block to one's socioeconomic standing and this could lower one's quality of life. An individual's socioeconomic status is a major factor determining if an individual gets sufficient social support. Popular thought postulates that persons of a lower socioeconomic class would receive minimum levels of social support.¹⁶

Financing one's health care needs in old age is one of the greatest concerns for the elderly even when they may have made some provisions for retirement in earlier years. Elderly persons who are on fixed incomes and of lower socioeconomic standing often find it difficult to meet health care needs. High out-of-pocket health care costs are cause for concern because they may influence the health care decisions and force patients to forgo care or be less compliant with treatment recommendations leading to the development of diabetes related complications and subsequent readmission to hospital.¹⁶ In their desire to improve the health of the diabetic patients, Akohoye, Patel, Anderson and Rothman¹⁷ looked at experiences diabetic patients faced and shared that problems ensued because of the low economic standard among the diabetic patients, caregiver, and health care provider.

In Trinidad and Tobago, the elderly are considered as those who are 60 years of age and older¹⁸. Ezenwaka, Nwankwo, Onuoha and Agbakoba,¹⁹ had indicated that the nurses and dieticians in Africa and the Caribbean favour the practice of diabetes self-management education (DSME). Also, Onuoha and Ezenwaka²⁰ opined that diabetic patients in Trinidad need support to practice self-monitoring of their blood glucose levels. If this call is to be extended to the elderly diabetic patients, they will require the supports of all, especially their family and social services.

Historical trends have shown that the African man's family is constructed from the teaching and experiences his forefathers obtained during slavery but there may be some disconnect in terms of the passing on tradition. The East Indian man's traditions learned from their indenture-ship however have been carried on from then, to generation to generation¹⁶. Rawlins¹⁶ furthered a structural functionalist approach as there are external forces guiding the family toward survival, taking on adaptive roles as seen by the single parent with male absent roles. These new challenges faced within the family poses the question, can the family protect the individual when in ill health in today's society? The family form is ever changing in today's world and is based on economic circumstances which tend to be the order of the day. The Government of Trinidad and Tobago has undertaken a number of welfare programmes aimed at ameliorating the challenges of the elderly. For example, prices have been reduced for the water and electricity rates, the old aged pension has increased to \$2,500.00(about US\$400) in 2008 to \$3,000 (US\$450) in 2014), and providing caregiving services through the Geriatric Adolescent Partnership Programme¹⁶

Diabetes continues to be a major health concern worldwide affecting people of all ages, with the elderly being particularly vulnerable to its effects and complications. Living with diabetes, while it can be effectively managed, can be a daunting task for the elderly diabetic patient. Recent observations at the Accident and Emergency Department of the San Fernando General Hospital have found that elderly diabetic patients are repeatedly being readmitted to the Medical Wards for diabetes and diabetes related illnesses.

Diabetes and its complications have reached epidemic proportions in Trinidad & Tobago and are forecasted to get worse. Diabetes accounts for 1 in 4 admissions to hospital and is the nation's second leading cause of death. This has dire implications not just for the individual family which must find the resources to deal with an elderly diabetic relative who has gone blind, had a leg amputated, or is in need of dialysis, but for

the public purse as a result of burgeoning costs both direct - doctor visits, prescriptions, labs and hospitalizations; and indirect - loss of productive years through death and temporary or permanent disability²¹. In this study, the conjecture that there are sufficient social and family services for the elderly diabetic patients in Trinidad and Tobago, as provided by the government of Trinidad and Tobago and the family culture is put to test. The main purpose of this study is to determine the perceptions of the elderly diabetic patients readmitted to San Fernando General Hospital regarding their diabetes management. We envisage that the information from this study can be used to build databases which can be used to create guidelines that families and other members of society can use to effectively manage an elderly diabetic patient at home grounded on the theoretical framework of the Social Ecological Model which predicates the unique social context in which the elderly is embedded and how this context might impact family and social support.

Aim

To determine the perceptions elderly patients readmitted at to San Fernando General Hospital with regard to contribution of the family and social support they receive to their readmission.

Objectives

At the end of this study we hope to:

- a) Determine what level of family support is available to elderly diabetic patients at home.
- b) Determine what level of social support is available to elderly diabetic patients in San Fernando General Hospital.
- c) Determine if the readmission of elderly diabetic patients to hospital is related to (a) the level of family and (b) social; support they receive.

Research Questions

- i. What is the level of family support do elderly diabetic patients receive at home?
- ii. What is the level of social support the readmitted elderly diabetic patients at San Fernando General Hospital receive at home?
- iii. What is the relationship between the readmission of elderly diabetic patients' and their levels of (a) family support and (b) social support they receive?

II. Research methodology

Method design

The study used a quantitative, descriptive cross-sectional approach to determine if the readmission of elderly diabetic patients to the medical wards of the San Fernando General Hospital was related to the level of family and social support they received²¹. The target population for this study composed of all elderly diabetic persons admitted to the Medical Wards (Wards 9, 10D, 11, 12 and Medical Extensions I, II & III) of the San Fernando General Hospital and included both sexes, all ethnicity, religion, educational status, socio-economic status and residential area. A sample of (n= 35) participants was chosen using Onuoha, Prescott-Carter and Daniel, ²², with a confidence level of 95% and a margin of error of 5%. Recruitment of participants was done on the Medical Wards of the San Fernando General Hospital as it allowed for a confirmed diagnosis of Diabetes by a physician and face to face contact with the participants. Five participants were chosen from each of the seven Medical Wards to ensure adequate representation of the sample population. Specific eligibility criteria included: (a) aged 65 years and older (b) diagnosis of diabetes for at least 1 year, (c) participants with diabetes related comorbidities such as cardiovascular diseases were also allowed and (d) have the ability to read and write or must have a relative present. Exclusion criteria will include: (a) elderly diabetics less than 65yrs of age (b) recent/current major surgery or medical procedures, (c) major psychiatric or neurological disorders and (d) terminal illness/ receiving palliative care.

III. Data collection

Structured questionnaire was used to collect data. The data was collected over ten consecutive days during the period April 10th 2016 to April 20th 2016. Data was collected using paper copies of the questionnaire and pencils to tick the appropriate answers. After approval was granted by the Ethics Committee of the University of the West Indies to conduct the study, elderly diabetic patients on the Medical Wards were approached by the researchers to assess eligibility for the study. Once eligible, the purpose of the study was explained to them and they were invited to participate.

Eligible participants were given an invitation letter and a written questionnaire along with the necessary tools (e.g. pencils, erasers and clip board) needed to complete the questionnaire. Participants were asked to refrain from putting their names on the questionnaire to ensure anonymity.

Instrument

A structured questionnaire was used to collect data on participant's demographic information and support systems that used to cope and manage their diabetes. The content of the questionnaire was based on literature. The questionnaire contained 33 items that required the participants to tick responses. The questionnaire consisted only of closed-ended questions. The items were formulated in simple language for clarity and ease of understanding.

The questionnaire comprised three sections: Section 1: Demographic Section contained eleven questions that were used to describe the general characteristics, similarities and differences of participants in the sample population. Section 2: Family Support. This section contained fourteen questions which focused on what role the family plays in the management of elderly patients with diabetes. Examples of such questions include: How does your family feel about your having diabetes? Do you need assistance from family members in managing your diabetes? Section 3: Social Support. This section contained eight questions and focused on what social support systems are available to the elderly diabetic patient. Examples of such questions include: Do you receive direct assistance (e.g. home care or financial aid) from people other than members of your family? Do you have easy access to healthcare services?

Data entry and analysis

Once the data is collected, the quality of the data was improved by checking for missing data and weeding out unwanted information that would generate wrong results and mislead findings. Data analysis was done using the SPSS (Statistical Package for Social Sciences) with specific codes being used for each item in the questionnaire.

Ethical considerations

Approval was granted from the Ethics Committee of the University of the West Indies after they reviewed the research proposal. Permissions were also sought and received from the Chairman/ Chief Executive Officer of the South West Regional Health Authority and from the Medical Director and Nurse Manager of the San Fernando General Hospital. A privacy letter was attached to the data collection instrument so that participant would be assured that the information that is given will be kept in strict confidence during and after the research is completed. Participants were also informed that they can withdraw from the study at any time without explanation or consequences of this action.

IV. Results

Demographic Data

The majority of the participants fell within the age group 65- 70yrs (34.3%) followed by the age group 85yrs and over (22.9%). Out of the 35 participants surveyed 18 (51.4%) were male and 17(48.6%) were female. The majority of the participants were of East Indian 17 (48.6%) and African 13 (37.1%) descent. More than half of those surveyed were widowed 19 (54.3%). Most of the participants lived in their own homes 23 (65.7%) with other family members 20 (57.1%). The majority of the participants supported themselves financially with their pension, others were dependent on savings 9 (25.7%) and relatives 1 (2.9%). Out the 35 participants surveyed 13 (37.1%) were admitted to hospital more than 3 times within the last year with 12 (34.3%) persons being admitted only once within the last year. (Table I: Demographic Data)

Family Support

Out of the 35 elderly surveyed, 22 (62.9%) stated that their families accepted the fact that they had diabetes, while 5 (14.3%) stated they did not feel accepted by their families. 13 (37.1%) of those surveyed stated that their families were willing to learn about diabetes in order to assist them in its management, while 13 (37.7%) stated that their families were not willing to learn about diabetes. More than half of those surveyed: 18 (51.4%) stated that they received no financial assistance from their families. The majority of the respondents stated that they were accompanied by a family member to their clinic appointments. 23 (65.7%) of the respondents also stated that their families provided transport for them to and from clinic appointments. Most of the participants surveyed had family members to provide care for them in the following areas: medication 16(45.7%), meal planning 24(68.65) and blood glucose testing 15(42.9%). (See Table II: Family Support)

Social Support

16(45.7%) of the participants surveyed stated that they were not confident in managing their diabetes mellitus on their own, while 20(57.1%) of them stated that they had some knowledge about diabetes management but not enough to manage the condition on their own. None of the participants surveyed stated that they were totally confident in managing their diabetic condition. 23(65.7) stated that their income were able to meet their health care needs some of the times while 49(11.4%) of the participants stated that their income was not sufficient to meet their health care needs. Of the 35 participants surveyed, 32(91.4%) stated that they did not

receive any direct assistance such as home care and financial aid to assist in the management of their diabetes. Most of the participants 32(91.4%) stated that they had adequate supplies of amenities and 25(71.4) stated that they had easy access to healthcare. (See Table III: Social Support)

Table 1: demographic data. N=35

AGE	FREQUENCY	PERCENT (%)
65-70yrs	12	34.3
71-75yrs	6	17.1
76-80yrs	3	8.6
81- 85yrs	6	17.1
>85yrs	8	22.9
RACE		
East Indian	17	48.6
Black/African	13	37.1
White	3	8.6
Mixed	2	5.7
GENDER		
Male.	18	51.4
Female.	17	48.6
MARITAL STATUS.		
Single.	5	14.3
Widowed.	19	54.3
Married.	7	20.0
Common-Law.	4	11.4
Who do you live with?		
Spouse.	8	22.9
Other Family members.	20	57.1
Friend.	6	17.1
Paid helper.	1	2.9
Previous admission		
Once	12	34.3
Twice	4	11.4
Three times	6	17.1
More than three times	13	37.1

Table II: Family Support. N=35

EDUCATION OF FAMILY MEMBERS.	FREQUENCY	PERCENT (%)
Yes.	12	34.3
Sometimes.	6	17.1
No.	3	8.6
FINANCIAL SUPPORT FROM FAMILY.		
Yes.	9	25.7
Sometimes.	8	22.9
No.	18	51.4
ACCOMPANIMENT TO CLINIC APPOINTMENTS.		
Yes.	18	51.4
Sometimes.	14	40.0
No.	3	8.6
CARE FROM FAMILY MEMBERS WHEN ILL.		
Yes.	28	80
Sometimes.	6	17.1
No.	1	2.9
ASSISTANCE WITH MEDICATION.		
Yes.	16	45.7
Sometimes.	10	28.6
No.	9	25.7
ASSISTANCE WITH MEAL PLANNING		
Yes.	24	68.6
Sometimes.	7	20.0
No.	4	11.4

ASSISTANCE WITH BLOOD GLUCOSE TESTING		
Yes.	15	42.9
Sometimes.	9	25.7
No.	11	31.4
ASSISTANCE WITH FOOTCARE		
	FREQUENCY	PERCENT (%)
Yes.	5	17.1
Sometimes.	11	31.4
No.	18	51.4
TOTAL	35	100
TRANSPORT TO AND FROM CLINIC APPOINTMENTS		
Yes.	23	65.7
Sometimes.	9	25.7
No.	3	8.6

Table III: Social Support. N=35

Social support	FREQUENCY	PERCENT (%)
LONLINESS AND HELPLESSNESS		
Yes.	9	25.7
Sometimes.	11	31.4
No.	15	42.9
KNOWLEDGE OF DIABETES		
Yes.	1	2.9
Sometimes.	13	37.1
No.	21	60
INCOME/PENSION TO MEET HEALTHCARE NEEDS		
Yes.	8	22.9
Sometimes.	23	65.7
No.	4	11.4
DIRECT ASSISTANCE		
Yes.	2	5.7
Sometimes.	1	2.9
No.	32	91.4
AMENITIES.		
Yes.	32	91.4
Sometimes.	3	8.6
No.	0	0
ACCESS TO HEALTH CARE		
	FREQUENCY	PERCENT (%)
Yes.	25	71.4
Sometimes.	10	28.6
No.	0	0

Table IV shows the relationship between the demographic characteristics of the readmitted elderly diabetics and family support they received. It shows that (a) financial support, and (b) previous admissions are related with family support; $p < .001$ and $p < .00$ respectively. Readmission is not associated with the other sub-variables of gender, age, marital status, race, living accommodation, and who they live with. Similarly, Table V highlights that no statistically significant association was identified with all the demographics variables.

Table IV: Relationship between Demographic Characteristics and Family Support.

Demographic Data.	Means Square	Significance
Age.	.248	.443
Gender.	.358	.255
Marital Status	.351	.257
Race.	.310	.315
Living Accommodations.	.231	.419
Religion.	.310	.315
Number of persons in household.	.313	.305
Who do you live with?	.081	.829
Financial Support.	1.491	.001*
Previous admission to hospital.	1.312	.000*

*P < 0.05

Table 4: Relationship between Demographic Characteristics and Social Support.

Demographic Data.	Means Square	Significance
Age.	.279	.375
Gender.	.180	.509
Marital Status	.533	.095
Race.	.203	.517
Living Accommodations.	.231	.419
Religion.	.203	.517
Number of persons in household.	.263	.371
Who do you live with.	.412	.188
Financial Support.	.140	.593
Previous admission to hospital.	.305	.323

(*p <0.05)

V. Discussion

Family and Social Support are very important in the care of elderly diabetic patients. This study has shown that elderly diabetics in Trinidad do receive some level of support from their families but it is not enough to effectively manage their diabetes. Of those surveyed, more than half of the participants (54.35%) were widowed suggesting the need for family and social support not only in the management of their diabetes but with activities of daily living. This situation is expected given their stage in life. This finding conforms what a number of authors had earlier published as the elderly must deal with multiple losses of family members and friends changes in functions and roles and fears about^{5, 8, and 23}.

The finding that the majority of the elderly readmitted diabetic patients (57.1%) live with other family members, although there was no significant (p=.829) relationship between the number of family members they live with and the level of care elderly diabetics receive from them suggest that although they are living with other family members, they are not getting the care and support that they need from them to effectively manage their diabetes. The advent of modernization and globalization has resulted in an uncaring society where family members in their ambition to progress, become so engrossed in their daily routine of work and household activities that taking care of the elderly family at home becomes a burden. Although the majority of elderly persons live with other household members, there were low level of interaction. We believe that financing one's health care needs in old age is of great concern for the elderly even when they may have made some provisions for retirement in earlier years

It is interesting to note the finding that of a significant relationship financial support and family support (p<001) and is indicative of 51.4% of those surveyed stating that they did not receive any financial support from their families, while 71.4% stated they support themselves financially through their pensions. This suggested that respondents have limited financial resources to support themselves and meet their health care needs there should be little wonder while readmission is prevalent among this group. This is corroborated by Coffey and Mc Carthy⁴ which emphasized the need for family support in the everyday care of elderly diabetics.

VI. Recommendation

The information gathered from this study will help healthcare providers pinpoint areas such as diabetes education and financial assistance where elderly diabetics need more assistance in order to help them better manage their diabetes. This information can then be used to develop (a) discharge planning programs; (b) education programs geared specifically to the elderly and their families that will provide them with information necessary to better manage their diabetes and prevent readmission to hospital. Also, the care and management of elderly diabetic patients should involve the cooperation between hospitals and community based health organizations e.g. Health Centers. The case managers in hospitals must work together with public health nurses and family members to achieve effective tracking and treatment of elderly persons with diabetes. Hopefully, such an approach could also reduce the occurrence of complications, the burden on medical resources and readmission to hospital.

Also to ensure that all elderly persons with diabetes can optimally self-manage their disease, it is recommended that government address out-of-pocket expenses by: enhancing financial assistance for elderly people living with diabetes (e.g. increasing old age pension) and ensuring access and affordability of diabetes medications, devices and supplies

References

- [1]. Robinson, S., Howie- Esquivel, J., & Viahow, D. Readmission risk factors after hospital discharge among the elderly. *Journal article* 2012; *Volume*15 (6), 338-351. DOI: <http://dx.doi.org/10.1089/pop.2011.0095>.
- [2]. Alper, E., O'Malley, T. A., & Greenwald, J. Hospital discharge and readmission. AHRQ Patient Safety Network 2015; Retrieved from <http://psnet.ahrq.gov/resources/resouurce...1disscharge-and-readmission>. Retrieved from <http://www.diabetes.org/diabetes-basic/statistics/>
- [3]. Yam, C. H. K., Wong, E. L.Y., Chan, F.W.K., Leung, M.C.M., Wong, F.Y.Y. Cheung, A. W.L., & Yeoh, E. K. Avoidable readmission in Hong Kong - system, clinician, patient or social factor? 2010; Retrieved from <http://www.biomedcentral.com/1472-6963/10/31>
- [4]. Coffey, A., & McCarthy, G. Community supports used by older people post hospital discharge. *British Journal of Community Nursing*, 2014; 17(4), 170-176. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=2011553581&site=nrc-live>
- [5]. Miller, A. T, & DiMatteo, R. Importance of family/support and impact to diabetic therapy.2013; DOI: 10.2147/DMSO.S36368
- [6]. Dalton, J. M., & Matteis, M. The effects of family relationships and family support on diabetes self-care activities of older adults: A Pilot Study. *Journal article*, 2014; Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=201277771&site=nrc>
- [7]. Holvey, S. M. (1986). Psychosocial aspect in the care of the elderly diabetic patient.1986; Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/3706389>
- [8]. Chen, Y., Hicks, A., & While, A. E. Loneliness and social support of older people in China: a systemic literature review. *Health and Social Care in the Community Journal*, 2014; 22 (2), 113-123. DOI: <http://dxdoi.org/10/1111/hsc.12051>.
- [9]. Gunn, K. L., Seers, K., Posner, N., & Coates, V. Somebody there to watch over you: the role of the family in every day, and emergency diabetes care. *Health Social Care Community Journal*, 2012; 20 (6) 591-598. DOI: <http://dx.do.org/10.1111/j.1365-25242012.01073x172X2013.120054.x>
- [10]. Wongsawang, N., Lagampan, S., Lapvongwattana, P. & Bowers, B. J. Family caregiving for dependent older adults in Thai families. *Journal of Nursing Scholarship*, 2013; 336-43. DOI: <http://dx.doi.org/10.1111/jnu.12035>
- [11]. Kadirvelu, A., Sadasivan, A. & Ng. Social support in type II diabetes: a case of too little, too late. *Diabetes, Metabolic Syndrome and Obesity: Target and Therapy*, 2012; 5. 407-417. Retrieved from <http://doi.org.10.2147/DMSO.S3718318>
- [12]. Wallace, S. P. Family and social welfare: Helping Troubled Families. Retrieved from *Equity and Social determinants of Health among Older adult. Journal article*. 2014; Vol. (22) 6, Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=1037866037site=nrc-live>
- [13]. Egede, L. E. Race Ethnicity, Culture and Disparities in Health care. *Journal of General Internal Medicine*, 2006; Vol. (21) 6. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1924616/>
- [14]. Kowlessar, G. More research needed on causes of diabetes, 2014; Retrieved from <http://www.guardian.co.tt/news/2014-01-30/health-minister-calls-detailed-study-more-research-needed-causes-diabetes>
- [15]. Uchino, B. N., Cacioppo, J., & Kiecolt-Glaser, J. K. Relationship between social support and physiological processes. A review with Emphasis on Underlying Mechanism and Implication for health. *Psychological Bulletin* , 1996; 119 (100) Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/8668748>
- [16]. Rawlins, J. M. The elderly in Trinidad - *West Indian Medical Journal*, 2008; - *SciELO* Retrieved from [Caribbean.scielo.org/scielo.php?script=sci_arttext&pid=S0043...](http://caribbean.scielo.org/scielo.php?script=sci_arttext&pid=S0043...)
- [17]. Akoloye, S., Patel, K., & Adkerson, A.M. L. Patient's caregivers, and providers' perceived strategies for diabetes care. *American Journal of Health Behaviour*, 2015; DOI:<http://sdxdoi.org/10.5993/AJHB.39.3.15>
- [18]. Rawlins, J.M., Simeon, D.T., Ramnath, D.D. & Chadee, D.D. The elderly in Trinidad: social and economic status and issues of loneliness. *West Indian Medical Journal*, 2008; 43 (3144). Retrieved from http://caribbean.scielo.org/scielo.php?script=sci_arttext&pid=S0043-31442008000600010.
- [19]. Ezenwaka, CE, Nwankwo, CU, Onuoha, PC, and Agbakoba, NR. The opinions of practice Nurses and Dietitians on implementing diabetes self-management education (DSME) in Africa and the Caribbean. *International Journal of Diabetes Research*, 2014; DOI: 10.5923/j.diabetes.20140305.01
- [20]. Onuoha, P. and Ezenwaka, C. Diabetes patients need support to practice self-monitoring of blood glucose levels. *Asian Journal of Science and Technology*, 2014; Vol. 5, Issue 12, pp789-792.
- [21]. Beck,C. & Polit, D. *Essential of Nursing Research*. 2014; Philadelphia, PA: Lippencott, Williams Wilkins
- [22]. Onuoha, P. Prescott-Carter, K and Daniel E. Factors associated with nursing students' level of satisfaction during their clinical experience at a major Caribbean Hospital. *Asian Journal of Science and Technology*, 2016; vol.07, Issue, 05, pp.2944-2954.
- [23]. DiMatteo, M., & Miller. T. Importance of family and social support and impact on adherence to diabetic therapy. *Diabetes, metabolic syndrome and obesity: Target and Therapy*, 2013; (6) 421-426. Retrieved from: [www.ncbi.nlm.nih.gov .<NCBI>PubMed Central \(PMC\)-live,21\(1\),12-22.](http://www.ncbi.nlm.nih.gov/pubmed/23112222)