SUMMARY AND CONCLUSION
There is an age old saying “Health is wealth”. The advancements in the field of science and medicine have led to the focus on healthy aging and healthy life. However with the globalization, the life style of individuals all over the world has changed to a fast paced one. Hence individuals have to deal with a multitude of factors that led to stressful situations. This is seen to have many a times negative health outcomes. Many life style diseases like diabetes, cancer, cardiovascular diseases may affect the health of the individuals. Chronic illness is the main contributors to disability and death. Diabetes mellitus is a serious condition associated with significant morbidity and mortality because of its short and long-term complications. Diabetes is one of the most common chronic health problems and its prevalence is increasing. Diabetes is also one of the most challenging of the chronic diseases from a psychosocial and behavioral perspective. There is no cure for diabetes till death, diagnosis can occur at any stage of life, and after diagnosis daily treatment is required for the remainder of the lifespan, which may or may not successfully prevent the development of serious long term complications, such as cardiovascular and kidney diseases. As a chronic condition, diabetes requires
lifetime management. This involves a complex daily regimen involving diet, exercise, medication and self-monitoring of blood glucose. It can place considerable psychological and behavioral demands on the individual.

OBJECTIVES

The main objective of the study is to find out the difference between type 2 diabetic patients and normals on the psychological factors such as personality factors and stress tolerance level. The study also attempts to find out whether stress tolerance level of the type 2 diabetic patients and normals will vary according to their socio demographic and life style factors.

VARIABLES

The variables of the study were psychological variables such as personality factors (extraversion, agreeableness, conscientiousness, neuroticism and openness) and Stress tolerance level. The socio demographical variables such as age, gender, religion, place of residence, education, marital status, number of children, number of siblings, type of family, birth order, occupation and monthly income and life style factors such as type of job, intimate friend, member of social organization, practice of yoga, practice of meditation and practice of exercise and were also used.

SAMPLE

The sample of the present study comprises of a group of 100 type 2 diabetic (50 males and 50 females) patients and a group of 100 normals (50 males and 50 females). The patient group was selected from government and private hospitals in
Thiruvananthapuram and the group of normals were selected from the general population. Sample selection was through purposive sampling method. The patient group was selected based on the expert opinion of a general physician and care was taken to see that no individuals were included with any other diseases like respiratory disorder, cardiac problems or other psychosomatic disorders in both the type 2 diabetic patients and normal groups.

TOOLS

The following tools were used for collecting data from the sample.

1. A personal Information Schedule. (Developed by the investigator)

2. Five Factor Personality Inventory. (Developed by Dr. Kumary Bhagavathy G.P. & Dr. Neelima Ranjith).

   a. Stress Tolerance Scale. (Developed by Reshmy C.S. and Dr.H.Sam Sananda Raj).

DATA COLLECTION PROCEDURE

As a first step of the data collection, the investigator identified the patients through clinical assistance from the hospitals selected and also identified the group of normals from among the general population. After that, the investigator established a good rapport with the subjects to make them feel comfortable. A brief introduction about the topic was given and the tools were administered to them individually as per the instruction given in the respective manual. The subjects were requested to make sure that all the item were answered. Scoring was done on the basis of instruction given in the manual.
STATISTICAL TECHNIQUES USED

The statistical techniques used for analyzing the data were the $t$-test, One-way ANOVA, Duncan test and Pearson product moment method of correlation.

FINDINGS OF THE STUDY

Comparison of type 2 diabetic patients and normals on five personality factors.

The first hypothesis that there will be significant differences between the type 2 diabetic patients and normals with regard to their personality pattern is partially accepted based on the findings of the study.

- There was no significant difference between type 2 diabetic patients and normals on the personality characteristic of extraversion.

- There was no significant difference between type 2 diabetic patients and normals on the personality characteristic of agreeableness.

- There was no significant difference between type 2 diabetic patients and normals on personality characteristic of conscientiousness.

- There was significant difference between type 2 diabetic patients and normals on the personality characteristic of neuroticism.

- There was no significant difference between type 2 diabetic patients and normals on the personality characteristic of openness to experience.
The personality pattern of the type 2 diabetic patients show that they have significantly more of the personality characteristic of neuroticism compared to that of normals

**Comparison of type 2 diabetic patients and normals on stress tolerance level.**

*The second hypothesis that there will be significant difference between the type 2 diabetic patients and normals with regard to their stress tolerance level is rejected based on the finding of the study.*

There was no significant difference between type 2 diabetic patients and normals in their level of stress tolerance.

**Correlation of the five factor of personality with stress tolerance level of the type 2 diabetic patients and normals**

*The third hypothesis that the five factors of personality will have significant correlation with the level of stress tolerance of type 2 diabetics and normals is partially accepted based on the findings of the study.*

- Extraversion with stress tolerance
  - There was no significant correlation between the personality factor of extraversion and the stress tolerance level of type 2 diabetic patients.
  - There was no significant correlation between the personality factor of extraversion and the stress tolerance level of normals.
Agreeableness with stress tolerance

- There was significant correlation between the personality factor of agreeableness and the stress tolerance level of type 2 diabetic patients.
- There was significant correlation between the personality factor of agreeableness and the stress tolerance level of normals.

Conscientiousness with stress tolerance

- There was significant correlation between the personality factor of conscientiousness and the stress tolerance level of type 2 diabetic patients.
- There was no significant correlation between the personality factor of conscientiousness and the stress tolerance level of normals.

Neuroticism with stress tolerance

- There was no significant correlation between the personality factor of neuroticism and the stress tolerance level of type 2 diabetic patients.
- There was significant correlation between the personality factor of neuroticism and the stress tolerance level of normals.

Openness with stress tolerance

- There was significant correlation between the personality factor of openness and the stress tolerance level of type 2 diabetic patients.
There was no significant correlation between the personality factor of openness and the stress tolerance level of normals.

The correlation analysis of the five personality factors with stress tolerance level of type 2 diabetic patients and normals showed a significant negative correlation of the personality factor of agreeableness with stress tolerance level of both type 2 diabetic patients and normals. A significant positive correlation was found with regard to the personality factor of conscientiousness and stress tolerance level of type 2 diabetic patients. With regard to personality factor of neuroticism a significant positive correlation with stress tolerance level was found for the normals. The personality factor of openness showed a significant negative correlation with stress tolerance level of the type 2 diabetic patient group.

Comparison of type 2 diabetic patients and normals categorized on the basis of socio demographic variables with regard to their level of stress tolerance.

The fourth and fifth hypothesis that Type 2 diabetic patients categorized on the basis of socio-demographic variables will differ significantly in their stress tolerance level; and that Normals categorized on the basis of socio-demographic variables will differ significantly in their stress tolerance level is partially accepted based on the finding of the study.

- Age

There was no significant difference in the level of stress tolerance among the five groups of type 2 diabetic patients categorized on the basis of age.
There was no significant difference in the level of stress tolerance among the five groups of normals categorized on the basis of age.

➢ **Gender**

- There was no significant difference in the level of stress tolerance between male and female type 2 diabetic patients.

- There was no significant difference in the level of stress tolerance between male and female normals.

➢ **Religion**

- There was a significant difference in the level of stress tolerance among the three groups of type 2 diabetic patients categorized on the basis of religion.

- There was no significant difference in the level of stress tolerance among the three groups of normals categorized on the basis of religion.

➢ **Place of residence**

- There was no significant difference in the level of stress tolerance between the rural and urban type 2 diabetic patients.

- There was no significant difference in the level of stress tolerance between the rural and urban normals.
➢ **Education**

- There was a significant difference in the level of stress tolerance among the five groups of type 2 diabetic patients categorized on the basis of education.

- There was a significant difference in the level of stress tolerance among the five groups of normals categorized on the basis of education.

➢ **Marital status**

- There was a significant difference in the level of stress tolerance among the four groups of type 2 diabetic patients categorized on the basis of marital status.

- There was no significant difference in the level of stress tolerance among the four groups of normals categorized on the basis of marital status.

➢ **Number of children**

- There was no significant difference in the level of stress tolerance among the four groups of type 2 diabetic patients categorized on the basis of number of children.

- There was no significant difference in the level of stress tolerance among the four groups of normals categorized on the basis of number of children.
➢ **Number of siblings**

- There was no significant difference in the level of stress tolerance among the five groups of type 2 diabetic patients categorized on the basis of number of siblings.

- There was no significant difference in the level of stress tolerance among the five groups of normals categorized on the basis of number of siblings.

➢ **Type of Family**

- There was no significant difference in the level of stress tolerance between type 2 diabetic patients of joint and nuclear families.

- There was no significant difference in the level of stress tolerance between normals of joint and nuclear families.

➢ **Birth Order**

- There was no significant difference in the level of stress tolerance among the four groups of type 2 diabetic patients categorized on the basis of birth order.

- There was no significant difference in the level of stress tolerance among the four groups of normals categorized on the basis of birth order.
➢ Occupation

- There was significant difference in the level of stress tolerance among the three groups of type 2 diabetic patients categorized on the basis of occupation.

- There was significant difference in the level of stress tolerance among the three groups of normals categorized on the basis of occupation.

➢ Monthly Income

- There was no significant difference in the level of stress tolerance among the three groups of type 2 diabetic patients categorized on the basis of monthly income.

- There was no significant difference in the level of stress tolerance among the three groups of normals categorized on the basis of monthly income.

The findings of the study with regard to the differences in the level of stress tolerance based on sociodemographic variables of type 2 diabetic patient and normal groups show that the sociodemographic variable of religion, the Muslims had significantly higher level of stress tolerance than the Hindu or Christian type 2 diabetic patient group. With regard to the level of education the professional qualified group in the both type 2 diabetic patients and normals were found to be have significantly higher level of stress tolerance compared to the other educational groups. With regard to the marital status the widowed group of type 2 diabetic patients had significantly higher level of stress tolerance than the married,
unmarried or separated/divorced groups. The analysis of occupational status show that both type2 diabetic patients and normals the unemployed group had significantly lower level of stress tolerance compared to the working and the retired groups.

**Comparison of type 2 diabetic patients and normals categorized on the basis of lifestyle factors with regard to their level of stress tolerance.**

The sixth and seventh hypothesis that Type 2 diabetic patients categorized on the basis of lifestyle factors will differ significantly in their stress tolerance level; and that Normals categorized on the basis of lifestyle factors will differ significantly in their stress tolerance level is partially accepted based on the findings of the study.

- **Type of job**
  - There was significant difference in the level of stress tolerance between the two groups of type 2 diabetic patients with sedentary and non sedentary occupation.
  - There was no significant difference in the level of stress tolerance between the two groups of normals with sedentary and non sedentary occupation.

- **Intimate friend**
  - There was significant difference in the level of stress tolerance between the two groups of type 2 diabetic patients categorized on the basis of with and without an intimate friend.
There was no significant difference in the level of stress tolerance between the two groups of normals categorized on the basis of with and without an intimate friend.

- **Member of social organization**

  - There was no significant difference in the level of stress tolerance between the two groups of type 2 diabetic patients who are a member of a social organization or not a member of social organization.

  - There was no significant difference in the level of stress tolerance between the two groups of normals who are a member of a social organization or not a member of social organization.

- **Practice of yoga**

  - There was no significant difference in the level of stress tolerance among the three groups of type 2 diabetic patients categorized on the basis of practice of yoga.

  - There was no significant difference in the level of stress tolerance among the three groups of normals categorized on the basis of practice of yoga.

- **Practice of meditation**

  - There was no significant difference in the level of stress tolerance among the three groups of type 2 diabetic patients categorized on the basis of practice of meditation.
There was no significant difference in the level of stress tolerance among the three groups of normals categorized on the basis of practice of meditation.

➢ Practice of exercise

There was significant difference in the level of stress tolerance among the three groups of type 2 diabetic patients categorized on the basis of practice of exercise.

There was significant difference in the level of stress tolerance among the three groups of normals categorized on the basis of practice of exercise.

The findings of the study with regard to difference in the level of stress tolerance based on the life style factors of the type 2 diabetic patient and normal groups show that the type 2 diabetic patients with non sedentary jobs have significantly higher level of stress tolerance than those with sedentary jobs. The type 2 diabetic patients with intimate friends was seen to have significantly higher level of stress tolerance compared to the group without intimate friends. Comparing the groups of type 2 diabetic patient and normal with regard to practice of exercise it was seen that in the case of type 2 diabetic patients the groups who do exercise were significantly higher level of stress tolerance compared to the group that never take exercise. In the case of normals the groups that never take exercise had significantly lower level of stress tolerance compared to the group that takes exercise.
IMPLICATIONS OF THE STUDY

The findings of the present study highlight the role of life style and sociodemographic factors in relation to stress tolerance level of type 2 diabetic patients and normals. The study reveals several personality, sociodemographic and life style factors that have a bearing on the level of stress tolerance of the diabetic patients. This factor if understood in the light of management of diabetes with help the diabetic patients, the doctors and care takers or family members of diabetic patients.

Implications for diabetic patients

Whoever may be the persons using the findings of this study, the final beneficiaries will be the diabetic patients themselves. If they are aware of the risk factors of their illness, life style modification techniques and interventions to reduce their psychological distress, they will benefit from it. Developing preventive personality characteristics will definite help in coping with stresses in life and better compliance with medication and management of diabetes. Regular exercise, taking up non sedentary jobs, better awareness of health and illness through better education, keeping oneself engaged in some activities and having friends through socializing are some of the things to be taken care of by those who are crossing 40 yrs and moving into 50yrs or 60 yrs

Implications for diabatologist, psychologists and counselors

The role of psychological factors in the incidence and prognosis of a disease is explored. It is found that psychological factors have a significant role in
the incidence and prognosis of diabetic disease. These findings can be immense value for diabetologist, psychologists and counselors. They can initiate steps so that the diabetic disease patients will undergo the intervention strategies for lifestyle modification and psychological distress reduction techniques, with the support of all who are concerned about the future of the patients.

**Implication towards awareness programme.**

In order to be more beneficial to common people, a general awareness about the risk factors leading to diabetic disease along with its prevention and management has to be created by means of mass communication. For this purpose, services of print / electronic media will play a significant role. In addition, to this, regular medical camps / awareness programs can be organized with the help of various clubs such as Lions / Rotary etc. Regular visits by social workers / counselors to work place, residential areas, old age homes, and other social functions will be useful for educating the people about diabetes.

World Health Organization (WHO) reports show that 32 million people will be diabetic by the year 2020. The International Diabetes Federation (IDF) estimates the total number of diabetic subjects to be around 40.9 million in India and this is further set to rise to 69.9 million by the year 2025. Total prevalence of diabetes, the data from the 2011 National Diabetes Fact Sheet (released Jan. 26, 2011) 25.8 million children and adults in the United States 8.3% of the population have diabetes. Kerala has a prevalence of diabetes as high as 20% double the national average of 8%. The prevalence is seen as 17% in urban, 10% in the midland, 7% in the highland, and 4% in the coastal regions. To meet this exigency,
diabetologist and psychologists and major hospitals will have to put in more efforts to organize awareness programs in a phased manner. It is suggested that major hospitals should make earnest endeavor to set up special departments consisting diabetologists and psychologists solely for this program.

LIMITATIONS AND CHALLENGES

The psychological variables included in the present study were limited to personality factors and stress tolerance level. However, a wide variety of other equally important variables remain to be explored. The sample size was limited. More of lifestyle factors like consumption of junk food and fast food etc and activity of the younger generation have to be included for an indepth study.

SUGGESTIONS FOR FURTHER RESEARCH

The investigator had made a sincere attempt in making the study meaningful, and as useful as possible, but certain limitations may have crept into the design, as well as in the execution. These limitations may be taken into account for further research in this area. The following are some of the suggestions for future research:

- The effect of socio-demographic and life style factors with regard to the personality of type 2 diabetic patients and normals can be analyzed.
- Variables such as quality of life, well-being, and emotional adjustment depression, anxiety etc. of diabetic disease patients can also be included in future studies.
• More intervention strategies such as the cognitive behavioral treatment, spiritual healing, transcendental meditation, visualization can be applied for further studies to find out the effect of these techniques on the level of stress tolerance and their personality of diabetic and control of diabetic patients.

• In this study purposive sampling was done. However for further research the sample can be selected through a random sampling of the population in the age group 20 to 45. Various life style and sociodemographic and personality factors that lead to the incidents of type 2 diabetes.

The investigator would be gratified, if the findings of the present investigation are used for further research and beneficial for those involved in the welfare of diabetic patients.