5. SUMMARY AND CONCLUSIONS

5.1. Summary

Developed countries have made significant strides to control infectious diseases which have resulted in increasing the lifespan of individuals, however non-infectious diseases have not received the same attention. Diabetes is one of those diseases which has now become a major global health problem. It is both progressive and life threatening with potentially devastating consequences for health (Suresh, 2006). The International Diabetes Federation (IDF) estimated at least 285 million people worldwide are suffering from diabetes disease (about 6.4% of adults), however it is predicted to reach approximately 435 million by 2030 (IDF, 2010). Asia is one of the regions that has a high prevalence rate of diabetes, and more specifically, the Iranian Diabetes Society (IDS) estimated that at present the population of diabetics is 5 million in Iran. Even more striking is that the IDS has estimated that less than 100 thousand of these diabetics have participated in Diabetes Patient Education. An even greater problem is that 50% of diabetics are unaware of their condition or do not have awareness about their disease, and they do not register themselves at the diabetes associations and clinics for patient education (IDF, 2010).

The aim of present study was to investigate the effect of Diabetes Patient Education on Anxiety, Depression and Perceived Stress among Type 2 diabetics. Further, the study was to examine if the outcomes of the intervention could be maintained over a period of twenty days in the treatment groups. The sample consisted of 120 adults diagnosed with Type 2 diabetes (60 men, 60 women) visiting the Iranian Diabetes Society and Imam Khomeini Hospital complex in Tehran, Iran. Their age ranged from 35 to 65 years old.
The demographic data sheet and selected tools were administered on all the identified cases. All the cases voluntarily participated in this research. They were notified that their personal information provided in the study would be kept strictly confidential and used for research purpose only. The sample for the study was selected based on the inclusion criteria. The pre-test assessment was done to determine the base line of the sample on anxiety, depression, and perceived stress. Demographic details of the subjects were also obtained from patient interviews and from their medical records in order to ensure the suitability of the sample. A larger sample (N=482) was tested on anxiety, depression, and perceived stress and those who had significant symptoms were selected randomly for the main study. The selected subjects were drawn into two groups, the intervention group (n=60) and the control group (n=60) respectively. The intervention group was subjected to the intervention program, while the control group did not receive any form of intervention.

After the pre-assessment, the intervention group was exposed to the intervention sessions focusing on diabetes patient education. The total of six sessions were administered as follows: 1) the first session focused on introductory and general diabetes facts, 2) the second session focused on healthy eating and managing nutrition, 3) the third session focused on physical activity and exercise, 4) the fourth session focused on daily control, self monitoring of glucose-knowledge of HbA1c and initiating treatment, 5) the fifth session focused on making appropriate lifestyle changes and dealing adequately with stress and psychological aspects of diabetes, and 6) the last session focused on awareness, prevention, detection, and treatment of acute/chronic complications of diabetes. The six sessions were 90 minutes each.
After the completion of the intervention program, a post-assessment was done 21 days later repeating all the test administered for the pre-assessment. The data obtained immediately after the six education sessions and after 21 days were subjected to statistical analyses. Tests were done to ensure the similarity of the sample at the pre-assessment level and were conducted post-treatment to test the effectiveness of the intervention program.

After the post-test, one way ANOVA and repeated measure ANOVA were the statistical tools employed to analyze the data. Analyses of anxiety (SAS), depression (DBI), and perceived stress (PSS) scores showed a significant decrease after Diabetes Patient Education on in the intervention group. Repeated measure ANOVA revealed that Diabetes Education was highly effective in reducing anxiety, depression and perceived stress, which can be attributed to effective intervention techniques adopted by the researcher.

A one-way ANOVA of the control group on anxiety, depression, and perceived stress scores at pos-assessment indicated there were no significant improvements in these respective scores.

Statistical analysis also indicated that the intervention group was able to maintain the outcome of intervention over a 21-day period. This showed that the intervention program effects were successfully maintained in the intervention group after the termination of the intervention sessions.
5.2. Conclusion

From the data analyses, it can be concluded that a significant decrease in anxiety, depression and perceived stress was observed after Diabetes Patient Education in the intervention group whereas no significant decrease in the respective scores occurred in the control group. Because the intervention group showed a significant decrease in their level of anxiety, depression and perceived stress after undergoing the Diabetes Patient Education Program. It can be concluded that the intervention reduced anxiety, depression and perceived stress. Secondly, the intervention program benefits of the intervention group could be maintained in a positive state even after post assessment. Finally, it can be concluded that the Diabetes Patient Education was also successful in positively affecting psychological problems such as anxiety, depression and stress.

5.3. Limitation of the present study

Some of the limitations of this study which can exist in the researches under the similar theme have been presented below:

1. The presented samples in this study were limited to the population of diabetes patients of Tehran, Iran, though the samples were from diverse demographic backgrounds. It is worth mentioning that other studies may be necessary in order to generalize the findings to the entire Iranian diabetics population. The samples in this study were limited to the diabetes patient population of urban areas and may not necessarily generalize to rural samples.

2. All of the diabetes patients in the study sample were diagnosed with Type 2 diabetes, therefore the results may not generalize to all type of diabetes.

3. Differences in the timing of the Diabetes Patient Education Program among the intervention group’s batches may have led to an uncontrolled effect which was inevitable due to limited resources and time.
5.4. Implications of the present study

An analysis of the findings of the present study reveals that there is substantial evidence for proving the efficacy of diabetes patient education in reducing anxiety, depression and stress among Type 2 diabetes. The implications of the findings of the present study are discussed below:

1. The theoretical and empirical reviews made in Chapter 2 adequately justify the need for the present study. These reviews briefly highlight the various theoretical and empirical underpinnings of the Diabetes Patient Education research of the past few decades. They reveal that Diabetes Patient Education has been researched in the western countries however there is very little if any research in Middle Eastern countries. Findings of the present study have provided adequate scientific basis for the efficacy of Diabetes Patient Education in Iran which is a typical Middle Eastern country.

2. The majority of previous research done in this area has focused on the effect of Diabetes Patient Education on physiological aspects of diabetes, while there are a few studies on the psychological aspects of such education.

3. The finding of the present research will be useful in achieving a better understanding of diabetic patients and also in training and counseling them. A complete understanding of the knowledge acquired through this research will be useful for the well being of the diabetics in the future.

4. The present research has also examined the prolonged maintenance of the benefits of the intervention. The findings have provided evidence to show that the intervention program could maintain the benefits more or less consistently over a period of 21 days.

5. The findings of the present study should draw the attention of educational counselors, diabetes educators, and researchers in the future.
5.5. Avenues of future research

Suggestions for future study are as follows:

1. The efficacy of the intervention program has to be studied on larger, different samples in order to draw further generalizations. This may include rural samples, samples from other cities in Iran, and samples in other Middle Eastern countries. Components of psychological aspects other than what those studied in the present study can be assessed and included in the intervention program. Such psychological aspects may include helplessness, anger, denial.

2. A long-term follow-up study may provide data for reporting the relative efficacy of the intervention in the maintaining the outcomes after several months or years.

3. A similar study can be conducted on the other types of diabetes in order to draw further generalizations.

4. A longitudinal study may be conducted across various developmental stages to find out whether the Diabetes Patient Education remains the same or changes in future.

5. More work is required to identify various types of training modalities and content areas for Diabetes Education.

6. Another area for further work could be to gain a better understanding of the effects of a stressful life in developing diabetes.