P-ISSN 2708-6453	Pakistan Languages and Humanities Review	Apr-June 2024, Vol. 8, No. 2
O-ISSN 2708-6461	https://doi.org/10.47205/plhr.2024(8-II)46	[526-539]

Pakistan Languages and Humanities Review
www.plhr.org.pk

RESEARCH PAPER

Exploring the Lived Experiences of Individuals to manage and Cope with Type 2 Diabetes applying IPA

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ABSTRACT

This qualitative research was conducted with main objective of examining the 'lived experiences' of individuals to manage and cope with type 2 diabetes (T2D). Twelve respondents (diagnosed with T2D) were shortlisted using purposive sampling technique from Lahore city Pakistan for this study. Data was collected through semi-structured interview method form the participants. Respondents' interview data were analyzed applying phenomenological analysis (IPA) to identify sub-themes and mega themes. IPA identified eleven identical themes from transcribed interviews. Findings highlighted individuals' causes of initial non-acceptance behavior, fears about disease, financial barriers, restrictive life styles, self-management strategies, role of their doctors, and family members to cope with disease. The study recommends that health practitioners should introduce diabetes management awareness programs as findings highlight the role of doctors' counselling to cope with disease and modify patient's life style after the disease. Additionally, patients' awareness about disease played vital role to adjust their life style and coping with it with support from family members.

KEYWORDS Individuals' lived experience, IPA, Type 2 Diabetes (T2D)

Introduction

Diabetes is a world-wide growing concern on account of long-life expectancy and modification in life-style. Year-2017 statistics indicate 425 million people live with diabetes globally and by 2045, figures will rise to 693 million. Presently, 415 million adults are diabetic which is expected to cross figure of 642 million by year 2040 (Padmanabha et al., 2018). Human digestive and endocrine system of vertebrates has an organ called Pancreas which is located behind the stomach. This gland pancreas produces insulin for the body to use sugar and fat from the food we eat. Now, diabetes starts appearing, if pancreas produces very little or no-insulin or human body cells do not respond appropriately to insulin (Wu et al., 2014).Type 2 diabetes (T2D) occurs when human body does not respond properly to insulin produced by Pancreas, the term is known as 'insulin resistance' (WHO, 2014). T2D is hastily rising disease with vascular complications globally but prevention strategies and disease-management across several developing countries are alike. Rapid plague of T2D is one of largest public-health problems around the world. Specifically, in developing nations, cardio-metabolic disorders are prevailing due to life-style modification and diet together with pre-disposition of genetics. In South-Asian countries, diabetes is a core risk factor of cardio-vascular diseases (Pandey et al., 2015).

T2D is growing rapidly globally and its prevalence is expected to rise gradually with prolongation of aging population and life expectancy (Yakaryilmaz & Ozturk, 2017). T2D occurrence is more in old-age population and is elevating. In addition, data reveals rise in diabetes prevalence with age and findings report that 38% of 65 years old individuals and older age are diabetic (Lee & Park, 2014). Coping with diabetes in old age is becoming critical public health-care concern in both developed and progressing countries 1/2 old individuals have diabetes or are pre-diabetic. And for remaining, 8/10 old individuals have some dysglycemia. Diabetes coping and management complications and associated morbidities occur more in old age diabetics individuals compared to young individuals (Chentli, et al., 2015). Prevalence rises with growing age and it is often diagnosed late in old people and they are more frequently hospitalized due to hypoglycemia than younger's (Mordarska& Zawada, 2017).

Literature Review

Diabetes, Types, and Prevalence

Diabetes is classified as a 'chronic' disease which is inadequacy/opposition of insulin and can raise the levels of blood glucose (Ding et al., 2017). T2D relates to latter mechanism by which despite producing insulin, response of body diminishes, and tolerable controlling of blood glucose doesn't attain" (Kayyali et al., 2019). T2D is categorized as failure of body to produce 'insulin', while in T2D, either insulin's insufficient measure is delivered or the appropriate working doesn't occur. 'Gestational diabetes' (GD) is a transient disorder which develops during pregnancy period as body of mother creates opposition from insulin. T2D is well-known type of diabetes and may expect medication to bring down glucose levels. Over the long-haul insulin treatment might be required. This is suggested that lifestyle are modified to eat less and exercising to maintain glucose level to regulate and balance T2D (WHO 2016). T2D has 90-95% share in all types (Chen et al., 2011).

T2D Risk Factors and Symptoms

Chun et al. (2016) proposed that Stress builds danger of diabetes since it causes resistance to insulin production. In any case, most people with T2D live in low and middle range income nations, anyway the commonness rates are a lot higher in high-salary nations. The utilization of junk food enhances to the pandemic as it advances the utilization of sugar sweetened drinks. Smoking and liquor utilization are likewise a danger of creating T2D however liquor is a lower hazard factor for the enhancement of diabetes (Kautzky et al., 2016). Individuals with T2D are having heavy weights generally, and experience high blood pressure issue (Emdin et al., 2015). Increased frequent urination, unexplained weight loss, increased hunger, and thirst are the common symptoms. Acute complication can be hyperosmolar hyperglycemic state, diabetic-ketoacidosis, heart disease, strokes, diabetic-retinopathy, and kidney-failure (Kitabchi et al., 2009).

Depression and nutritional elements impact the danger of T2D. Genetic issues additionally play a critical part in its exhibition. This is validated that a family history with diabetes gives 2.5% increased risk for T2D (Stumvoll et al., 2005). T2D risk is about 38%, if 1% has T2D and about 60% if both the guardians are diabetic (Pierce et al., 1995). People with T2D are probably going to encounter depression while utilizing endorsed insulin when contrasted with those utilizing non-insulin medicine or dietary and life routine interference alone (De Groot et al, 2016). Studies about diabetes firmly believe that lack of exercise and obesity is the primary reason of T2D. These studies also indicate that genetics comparatively increases its risk factors. Healthy life style like normal weight, proper diet

and regular exercise are recommended prevention techniques. As we know that this disease has no cure, yet healthy life style adds more years to prolong T2D age (Chen et al., 2011). Recommended preventions are maintaining normal weight, exercise, eating properly while dietary changes, metformin, insulin, and bariatric surgery are the known treatments (Kitabchi et al., 2009).

Managing and Coping with Diabetes

Traditionally, diabetes management (DM) is seen from the restorative perspective of observing blood glucose level, blood pressure and cholesterol everything thought about known as metabolic control (NICE, 2015). Diabetic individuals are suggested to modify their life style, adopt healthy dieting routine, legitimate exercise, and pursue medical recommendations (WHO, 2016). This incorporates managing precise prescription and diabetes testing (Montez & Karner, 2005), participating in social insurance arrangements (Watts et al., 2010), consolidating diabetes training (Lutfey, 2005), suggested lifestyle changes, as modifications in eating habits (Brackenridge & Swenson, 2004), and starting exercise (Nagelkerk et.al, 2006). Successful DM is dependent upon extent of an individual's adherence to keep arrangements, monitor his/her glycemic status, taking medicine, adjusting and modifying life style. Essential DM-therapies include: adjusting diet, exercise, foot-care and terminating smoking (Saleh et al., 2014).

A series of self-management routine is required for T2D person to join daily health related activities like diet and medicine (Houle et al, 2016). To ensure most favorable glycemic control, diabetes self-management behaviors are essential (Mikhael et al., 2018). Exercise is also vital component of DM to improve insulin effect, weight loss, and decreasing intolerance to glucose etc. Education and counseling play vital part to enhance individuals' life quality (Saleh et al., 2014).

Material and Methods

It is process to explore something which is unknown through evidences. Later, these evidences are turned into results (Umair & Butt, 2023).

Research Design and Approach

Present study employs qualitative research approach as this approach sufficiently describes individuals' perspectives, and explores meanings of their existence within different contexts and roles. Lastly, this approach increases cognizance of data utilization of different sources (Yin, 2015). While, in quantitative approach, results are derived from data analysis through statistical techniques (Akhtar & Butt, 2022; Butt & Yazdani, 2023). In current study, researchers utilized 'phenomenological research' approach to examine lived experience of chosen respondents from different backgrounds. Phenomenological studies are mainly focused on the "interpretations of what people experiences and how it is that they experienced (Patton, 1990). "Essence is seen as common discoveries in the individual's experiences (Creswell, 2007). The primary emphasis of current study was to explore 'lived experience' of individuals diagnosed with T2D.

Selection of Study Participants

This study sample included six (6) middle and six (6) old age group participants with T2D from Lahore city, Pakistan using purposive sampling.

Data Collection through Interviews

Data were collected through in-depth interviews**.** English, Urdu and Punjabi were used depending on the participant's preference. Researchers conducted interviews with all patients with T2D. The interview was consisted of open-ended questions. The interviews were exploratory in nature with duration of 25-30 minutes. The interviewers queried further during the questioning to pick up a more profound understanding of the patient's response to conclusion and their behaviors and experiences with the management of T2D and what are the patient's perceptions about diabetes and how this chronic disease influences their personal lifestyles. To accomplish data saturation, interviewers used the probing techniques to get to patient's feelings, emotions and understanding into why and how patients deal with their disease and with its outcomes. Each interview was audio-recorded and researchers made field notes with all participants. After completing the session of interview with all respondents, Interviewer gradually interpreted the recorded audio to arrange context and assigned an exclusive code to secure the respondents' confidentiality and privacy.

Data Analysis Process: IPA

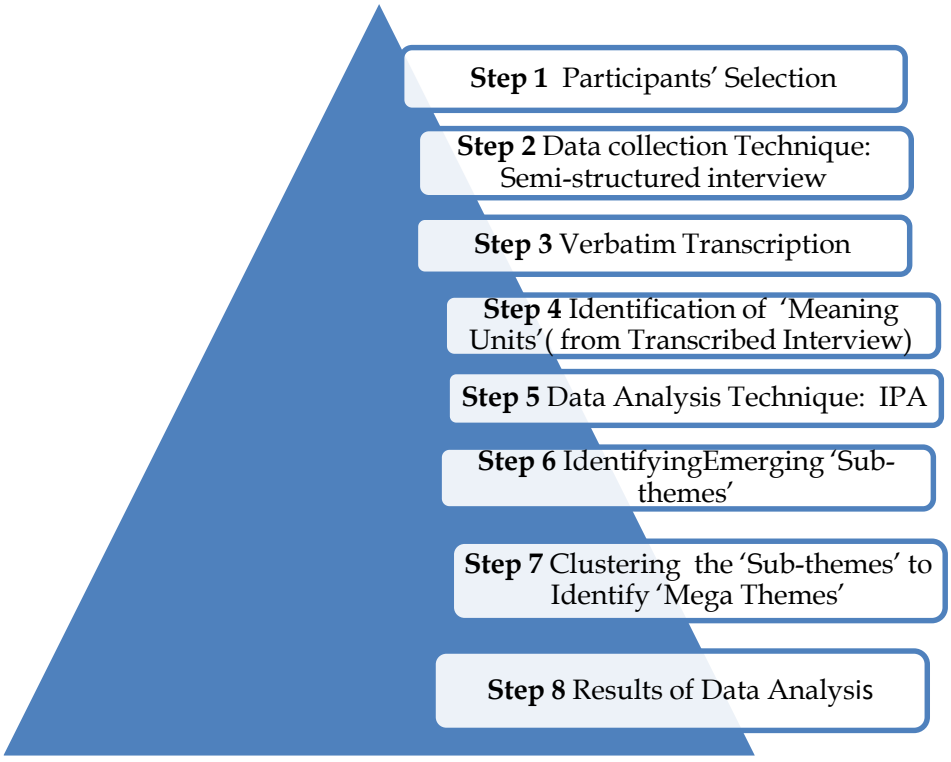

Figure 1: Data analysis process

IPA was used to analyze data from this study. This technique was picked as it posits that lived understandings can be known through inspection and interpretation of meanings that individuals urge it. All things considered; it is well suited to comprehend participant's personal experiences of daily lives. In accordance with the qualitative research approach, the transcripts were analyzed using the complete steps guide of IPA offered by Smith and Osborn (2008)**.** It includes steps such as read, analysis of transcripts many time, which follows 'meaning units' focused upon descriptive comments, and finally lead to superordinate themes. Throughout entire open coding process, transcriptions were continuously checked to ensure that the participant's experiences were effectively discussed in the emergent 'themes'. Researchers complied themes while identifying link

between emerging themes. These themes were then grouped with respect to conceptual connections to highlight the important facets of the participant's experiences. This process was repetitive for all the transcripts. Keeping with IPA idiographic commitments, mega themes were then developed at a higher abstraction level based on emergent themes across all the transcripts.

Results and Discussion

Participants' Profiles

Table 1 shows that study sample included 12 respondents with equal number of participants from middle and old age group. Participants included both males and females. All participants identified with T2D also varied in their age of identification of diabetes, lived experience and family history profiles.

Table 1
T2D Participants' Profile

Participant Name	ID	Age	Gender	# of years with diabetes	Age of Diagnosis	Family History of Diabetes
Middle Age Participants						
1. Mrs. Imran	P1	49	Female	7	42	Father, brother, sister
2.Khalida	P2	53	Female	10	43	Non diabetic
3.Fatima	P3	50	Female	8	42	Mother, husband
4. Saghir Khan	P4	55	Male	9	46	both grandparents
5.Ishrat Umar	P5	46	Female	5	41	Sister
6. Sobia Sheikh	P6	55	Female	10	45	Parents
Old Age Participants						
7.Jamil Ahmed	P7	60	Male	10	50	Non-diabetic
8.Nargis Begum	P8	61	Female	7	54	Father
9.Naureen Mukhtar	P9	65	Female	12	53	Father, brother ,sister
10.Kishwar Butt	P10	67	Female	10	57	Non-diabetic
11.Sohail Shafiq	P11	60	Male	8	52	Father and grandfather diabetic
12.Mirhat Hussain	P12	62	Male	4	58	Non-diabetic

Results of IPA (12 Participants' Interviews): Themes and Sub-themes

IPA of transcribed participants' interview led to emerging sub-themes which were grouped together and clustering resulted in 11 themes in research participants. The themes emerged are presented in table 2.

Table 2
Themes Merged from Participants Interviews using IPA

Themes	Sub-themes	#of responses		
Theme 1: Pre-disease disposing factors				
		Middle Age	Old Age	Total
	1.1 Family diabetic history.	5(6)	3(6)	8(12)
	1.2 Stress and hypertension main causes	6(6)	4(6)	10(12)
	1.3 Not following diet plan & precautions.	-	2(6)	2(12)
Theme 2: Reluctance to acceptance of disease and potential fears				
	2.1 Initial non-acceptance behavior due to tension or shock.	5(6)	6(6)	11(12)

	2.2 Initial non-acceptance due to sudden diagnosis of disease which is for life-time.	3(6)	3(6)	6(12)
	2.3 Mentally disturbed being first diabetic person in family.	1(6)	1(6)	2(12)
	2.4 Non-acceptance due to fear of insulin dependence.	2(6)	4(6)	6(12)
	2.5 Takes lot of tension.	6(6)	5(6)	11(12)
	2.6 Non acceptance due to fear of its harmful effects on kidneys, and fear of dialysis.	6(6)	2(6)	8(12)
Theme 3: Adverse impacts on Health				
	3.1 lost energy, mouth dryness, and extreme pain.	6(6)	4(6)	10(12)
	3.2 Feel numbness, thirst and dry throat.	6(6)	6(6)	12(12)
	3.3 foot pain and breathing difficulty while walking.	3(6)	2(6)	5(12)
	3.4 Feel shivering in legs and some weakness in case of low sugar.	6(6)	3(6)	9(12)
	3.5 Passes excessive urine	5(6)	4(6)	9(12)
Theme 4: Potential fears with acceptance of disease				
	4.1 Have to follow restricted diet plan.	6(6)	5(6)	11(12)
	4.2 non healing wounds.	6(6)	2(6)	8(12)
	4.3 Will Impact eye sight and kidney, heart or other parts of body.	6(6)	5(6)	11(12)
	4.4 Fear of insulin dependence.	3(6)	5(6)	8(12)
	4.5 Fear of complicated treatments.	3(6)	4(6)	7(12)
Theme 5: Disease Acceptance and Behavioral Change				
	5.1 Acceptance and behavioral change due to counseling by family (spouse / children).	3(6)	3(6)	6(12)
	5.2 acceptance and behavioral change due to counseling by Doctor.	5(6)	3(6)	8(12)
	5.3Develops self- realization to manage diabetes.	4(6)	2(6)	6(12)
	5.4 Disease Acceptance & behavioral change observing many people live with diabetes.	4(6)	1(6)	5(12)
Theme 6: Financial barriers in coping with diabetes				
	6.1Burdened by complex treatment.	5(6)	3(6)	8(12)
	6.2Difficulty to pay for medications.	4(6)	-	4(12)
Theme 7: Self-Coping/ adjustment strategies				
	7.1 Avoid excessive sugar intake.	6(6)	2(6)	8(12)
	7.2 Take medications.	6(6)	4(6)	10(12)
	7.3 Monitoring of blood glucose level.	6(6)	5(6)	11(12)
	7.4 Healthy and sugar free diet plan.	4(6)	2(6)	6(12)
	7.5 Regular Check-up.	6(6)	5(6)	11(12)
	7.6 Daily Walk.	4(6)	2(6)	6(12)
	7.7 Develop awareness about diet plan.	2(6)	1(6)	3(12)
Theme 8: Role of Doctor				

	8.1 Counseling and awareness by doctor regarding insulin and medicine for glycemic control.	6(6)	4(6)	10(12)
	8.2 Doctor's counseling to follow proper diet plan.	6(6)	3(6)	9(12)
	8.3 Doctor advises Daily walk as effective remedy for diabetes.	5(6)	2(6)	7(12)
	8.4 Doctor monitors blood glucose level and adjusts insulin or medicine accordingly.	6(6)	5(6)	11(12)
	8.5 Doctors counsels to accept disease.	6(6)	2(6)	8(12)
Theme 9: Role of Family Support in Diabetes Management and Developing Awareness				
	9.1 Family not allow eating high sugar content foods.	2(6)	2(6)	4(12)
	9.2Massage therapy by children to relief pain in legs and feet.	4(6) 3(6)	3(6) 2(6)	7(12) 5(12)
	9.3 Family develop awareness about diet plan or medicine.	3(6)	1(6)	4(12)
	9.4 Family help in physical activity / routine task.	5(6)	1(6)	6(12)
	9.5 Spouse helps in injecting insulin, insists for regular checkup.	5(6)	1(6)	6(12)
Theme 10: Medical treatments and self- management to control diabetes				
	10.1 Daily Intake of insulin/tablets.	6(6)	6(6)	12(12)
	10.2 Avoid excessive sugar intake.	6(6)	6(6)	12(12)
	10.3 Routine medical Checkup.	6(6)	4(6)	10(12)
	10.4 Immediately consults doctor if in blood glucose level fluctuates.	3(6)	5(6)	8(12)
	10.5 Glycemic control through medication, diet plan, walks and precautions.	6(6)	3(6)	9(12)
	10.6 Eat sweet as immediate remedy in low blood glucose level.	6(6)	5(6)	11(12)
	10.7 Daily walk effective to cope with diabetes.	4(6)	5(6)	9(12)
	10.8 Massage therapy to relief pain in legs.	2(6)	4(6)	6(12)
	10.9 Monitors blood glucose level with glucometer	6(6)	6(6)	12(12)
Theme 11: Restrictive lifestyle due to diabetes				
	11.1 Due to fatigue or weakness, can't stand for long times.	6(6)	1(6)	7(12)
	11.2 Unable to walk for long duration.	4(6)	5(6)	9(12)
	11.3Imposes restriction on physical activity.	5(6)	5(6)	10(12)
	11.4 Restriction on favorite food and have to follow diet plan.	6(6)	4(6)	10(12)
	11.5 Have to carry medicines or any food item while traveling.	6(6)	6(6)	12(12)
	11.6 Insulin dependence.	6(6)	2(6)	8(12)
	11.7 Fatigue and thirst.	6(6)	6(6)	12(12)

Findings of Interpretive phenomenological Analysis (IPA) and Discussions

Following section discusses results of IPA, linked by the common experience of being prescribed by participants. Eleven common themes emerged in middle and old age group respondents. Family diabetic history is identified as a key risk factor for T2D development. In this study, participants recognized that they had family history with diabetes. Most of participants recognized stress/ tension, family history, and taking high sugar content food as pre-disease disposing factors. Majority of patients recognized diabetes as a chronic disease that needs long term treatment for rest of life till death. Meanwhile, patients believed diabetes as a blood glucose level disorder and the glycemic fluctuation are mostly related to stress and hypertension. Among the main factors contributing to diabetes, the foremost is patient's non-acceptance behavior for diabetes and lack of accurate knowledge and awareness about diabetes. The most potential fears for diabetes related in participants were its impact on kidney, & dialyses fear.

Many participants experienced notable symptoms of hypo/hyper-glycemia and recognized swear headache, shivering, and anxiety. The most similar symptoms experienced by the participants were thirst, dry throat, fatigue, frequent urination, feet swelling and weakness. Participants recognized that they had fear for dependence on insulin, fears due to diabetes impact on eye sight, kidney or heart failures. The most common cause identified by participants was the horror of wounds won't heal. Financial barrier was reported as a major issue for the management of T2D and research participants discussed that diabetes itself is not an expensive disease but its impacts are adverse and harmful.

Participants mentioned that they were following proper controlling measures provided by their doctors. They check their glucose levels regularly. Few of them recognized that they try to walk daily on recommendation of doctor. Routine medical checkup was the most common diabetes controlling measure mentioned by participants of this study. Most of the participants shared avoiding restricted food, monitoring of blood glucose fluctuations, routine medical checkup, followed diet plan, and taking proper medications on accurate timings as crucial components of their DM practices to control blood-glucose level and avoid diabetes complications. Most of participants concluded that they were following their diet plans according to doctor's recommendation and taking medications regularly. In response to question how did they accept disease and change their behavior, participants shared disease acceptance & behavior change with support, counseling by family / doctor / colleagues, or developing self- realization.

Participants mentioned that they take their medications regularly, try to follow restricted diet plan, immediately consult with their doctors in case of blood glucose fluctuations. Mostly participants mentioned, they are going through proper medical checkups and daily walk on doctor's recommendation. Most of participants were well aware about their medications. Majority were following restrictive lifestyle due to T2D. Majority of participants mentioned that they are unable to walk or stand for long durations. Additionally, they also mentioned that they are taking their meals into chunks of five meals rather than taking two to three meals. Mostly participants shared that their family support them conforming healthy diet plan and restricted food items by making sugar free foods. Participants shared positive role of their family support, care in developing awareness, acceptance & coping with disease.

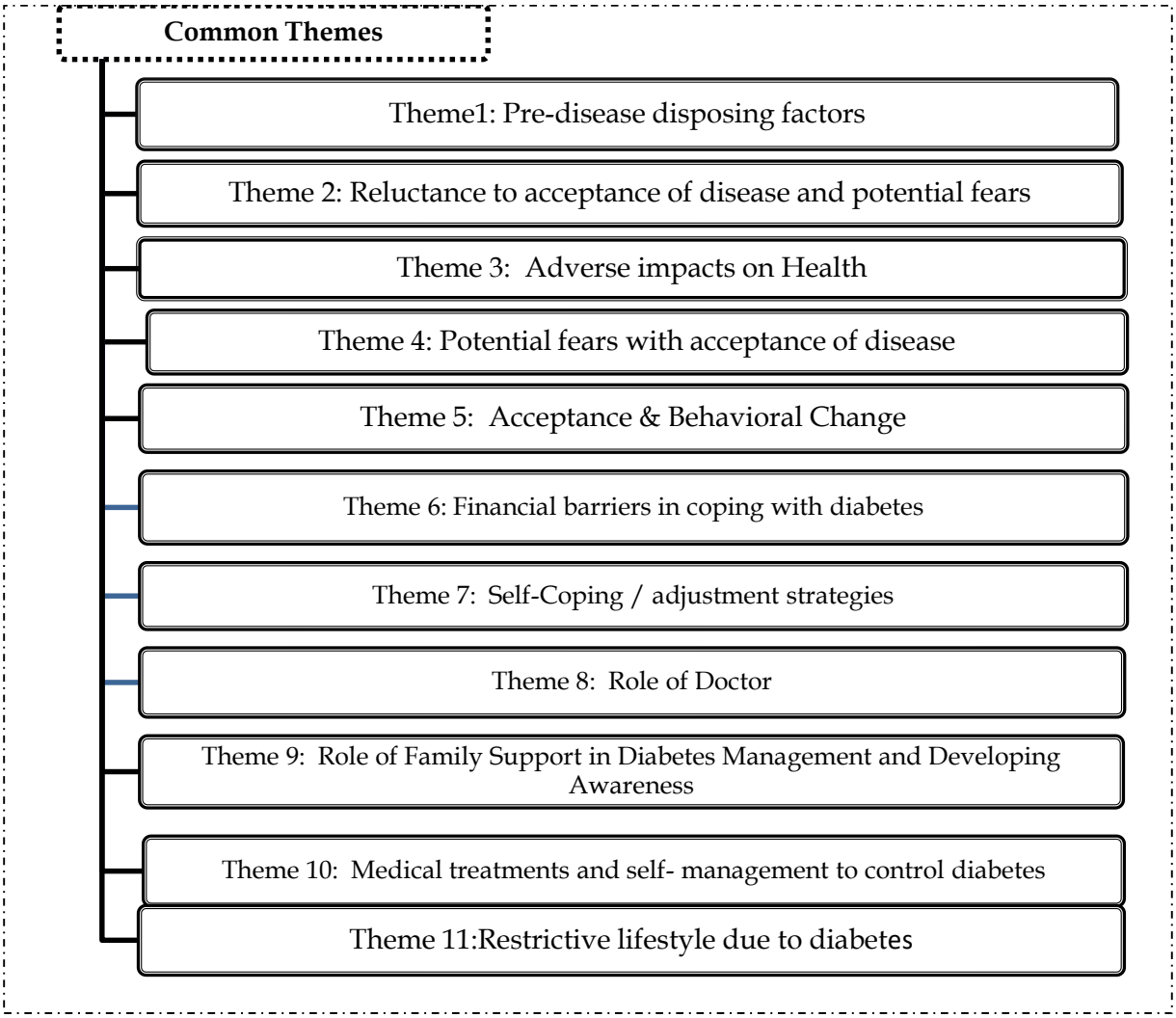

Figure 2: Common themes emerged

Most of them shared following diet plan, medication, and walk, monitoring blood glucose level and regular checkup as effective self-management controlling measures. Diabetes also imposes many restrictions in life style. Participants experienced restrictions due to dependence on insulin or medicine, limited physical activity, restrictive diet plan, and blood glucose level fluctuations. But from findings, it is evident that after behavioral change participants developed awareness and positive attitude to manage diabetes. They developed awareness to cope with disease and managed by adjustment in diet plan, taking medicines or regular walk, self-monitoring of blood glucose level, and consulting doctor. Findings also showed significance of family support in acceptance behavior to disease and diabetes management. Special care by spouse and children was evident particularly in old age study participants in life style adjustment after being diabetic.

Identified Themes and Support from Literature & Theories:

Few emerged themes applying IPA analysis are also supported from literature and theories.

Self-Efficacy Theory (SE)

Theme of acceptance &behavioral change, themes related to self-management are supported by theory of self-efficacy (SE). According to this theory, "self-

efficacy/confidence of a person is his /her capability of completing particular behaviors, and expectancies of outcome, negative or positive consequences of each behavior a person foresees impacts his health behavior" (Bandura, 1998). In T2D patients, positive expectancies of outcome and self-efficacy predict improved adherence and glycemic control. Greater self-efficacy enables patients putting forth adequate effort to maintain their diabetes-care behaviors. Besides this, better self-efficacy is mediating link between having additional responsibility for DM and indicating improved adherence for treatment, systemized family supportive surrounding, and in range glycemic control (Hilliard et al., 2016).

Family system theory (FST)

In FST, behavior is understood in family interactions context and it focuses upon family processes targeting FST based approaches of intervention. Theme role of Family emerged as majority of participants shared their lived experience of coping with diabetes with support, care of their family members. This theme finds support from previous studies (Pesantes et al., 2018; Bennich, 2017); Spencer-Bonilla et al., 2017). T2D management impacts members of a family in different ways. It either causes psychological suffering or improves family structure (Bennich, 2017).

Theory of Planned Behavior (TPB)

"TPB is dependent upon self-assessment and entails person's capability to assess individual's attitude of behavior, his perceptions, importance given by others to that person to achieve particular behavior, and amount of effort put by that person to complete a particular behavior" (Lee, 2017).Supporting patients to execute essential personal-care behaviors with help of strategies is vital job of care-providers in diabetes. Interventions of behavior are also imperative to support patients in implementing personal-care practices essential for patients' life (Peyrot & Rubin, 2007).Themes of acceptance, behavioral change and role of doctor's counseling are supportive from TPB as participants' acceptance behavior was accomplished by developing awareness, counseling by their health providers specially advice and counseling by doctor.

Conclusion

Current study examined lived experiences of individuals to cope with with T2D. IPA results reveal respondents' perception of lived experience about diabetes, their requirements for self- management, restrictive lifestyles, financial barriers, and role of health practitioners (doctors), family and social support in coping with diabetes. Findings showed diabetes impacted participants' physical health, life style and psychological behavior. This study concluded that diabetes affected patients' health, life style and psychological behavior. Among the main factors contributing to diabetes, the foremost is most of patients' non-acceptance behavior for diabetes and lack of awareness about diabetes. However, with the family support and doctor's counseling they accepted this disease and changed their behaviors and lifestyle. Their self-awareness had key impact in glycemic control. This study highlights the need of self-management for the avoidance of adverse impacts of diabetes as lifestyle management is the key to diabetes self-management.

Recommendations

This study has recommendations for health practitioners. They should introduce diabetes self-management educational program or studies for the awareness of diabetes

management. Secondly, financial constraints had mentioned by mostly participants for the treatment of diseases caused by diabetes like Dialyses and Heart disease. These types of diseases are expensive to treat and require big amount for the treatment, that's why it is recommended to launch social campaigns for the support of deserving persons. Thirdly, study participants highlighted the health practitioners' role in counselling and developing awareness to cope with diabetes. Hence, they can play vital role to adjust T2D patients regarding self-management of diabetes. The study has also recommendations for researchers in the field of diabetes. In majority of participant, initial non acceptance was due to unawareness about disease which was changed by counseling of health providers, family members or colleageues. Therefore, further research is needed to focus on these behavioral changes in managing diabetes and planned behavior change. In majority of participant, initial non acceptance was due to unawareness about disease which was changed by counseling of health providers, family members or colleageues. Therefore further research is needed to focus on behavioral impacts in managing diabetes and planned behavior change.

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