Chapter-3
METHODS

As mentioned in the preceding chapter, the present research was undertaken to study psychological well-being and quality of life among rural and urban patients of diabetes mellitus. This chapter deals with the research steps undertaken for the present investigation. The concept of methodology includes the aspects, namely, variables under study, participants, measures, procedure and data analysis. These aspects of overall research methodology can be thought of as forming a case for execution of the present study. Additionally, the methodology provides detailed information about how the subjects used for the study, the description of the participants and the measures used in the study. As the present study is concerned with the psychological well-being and quality of life of diabetic patients, the main variables involved in the study are psychological well-being and quality of life and rural/urban geographical location. Main objectives of the study were to examine the difference between psychological well-being and quality of life of the patients of diabetes mellitus due to geographical location, i.e. rural and urban area.

3.1. Research Design

In the present investigation, comparative analysis of psychological well-being and quality of life of rural and urban diabetic patients was carried out. There were two groups of subjects viz rural diabetic patients and urban diabetic patients. The sample was drawn from two different (rural and urban) geographical areas making study cross-sectional in nature. Both the groups (rural and urban) were matched with respect to socio-economic status, duration of disease and age etc as these variables are likely to affect psychological wellbeing as well as the quality of life. Thus the design of the study is cross-sectional with two match groups.

3.2 Participants

About the Study Area (AL Karak Jordan)

The present investigation was carried out in AL Karak city of Jordan. “The Hashemite Kingdom of Jordan is an Arab kingdom surrounded by Saudi Arabia, Iraq, Syria, and Palestine. The capital, Amman is Jordan’s most populous city as well as the country’s
economic, political and Cultural Centre. The latest census, 2015, showed the population numbered some 9.5 million. 2.9 million (30%) were non-citizens, a figure including refugees and illegal immigrants and lack of natural resources, the large flow of refugees and regional turmoil has hampered economic growth” (Al-Asad, Mohammad, 2004; Ghazal, 2016; Jordan's Economy Surprises, 2015). “Despite of the fact that Jordanian Economy is the smallest economy in the Arab region is attractive to foreign investors based upon a skilled workforce and the country is a major tourist destination, and also attracts medical tourism due to its well-developed health sector. Jordan is the region's top medical tourism destination, as rated by the World Bank, and fifth in the world overall. The majority of patients come from Yemen, Libya and Syria due to the ongoing civil wars in those countries. Jordanian doctors and medical staff have gained experience in dealing with war patients through years of receiving such cases from various conflict zones in the region. Life expectancy in Jordan is around 74.6 years. The leading cause of death is cardiovascular diseases, followed by cancer. Life expectancy in Jordan was 74 years in 2013. 99% of Jordan's population has access to clean water and sanitation despite it is one of the world’s poorest in water resources (The Associated Press, 13 July 2009; El-Said, Hamed; Becker, Kip, 2013; Al Emam, 2015; The World Factbook – Jordan”. CIA World Factbook, Retrieved 11 December 2016; Malkawi, 2015). Al-Karak's metropolitan population was estimated to be 68,800 in 2013, making up 31.5% of the total population of the Karak Governorate. Most of the population of the city are (75%) and there is also a significant Christian population (25%). In general, the percentage of Christians in al-Karak is among the highest in Jordan. There are four major hospitals in Karak

With a view of the broader objective of the present investigation, care was taken to draw the sample from both rural and urban areas in a balancing form. Since the research of aim was to study the psychological well-being and quality of life of the rural and urban diabetic patients, care was taken to control the other variables that can affect the dependent variables under study. The socio-economic status, duration of disease, and age etc can are some significant factors required to be controlled as these were supposed to have an impact on the psychological well-being and quality of life. The probability sampling method was not possible in the present investigation. The researcher used a purposive (non-probability) sampling method in this study. Every possible effort was made to match the rural and urban sample with respect to those
factors which could affect the main variables under study. In this study N= 200 respondents participated. Description of the sample is highlighted bellow.

Table 3.1
Showing demographic characteristics of sample.

<table>
<thead>
<tr>
<th>RURAL/URBAN</th>
<th>N</th>
<th>GENDER</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>RURAL</td>
<td>Nr = 100</td>
<td>Male =50</td>
<td>Female =50</td>
</tr>
<tr>
<td>URBAN</td>
<td>Nu = 100</td>
<td>Male =50</td>
<td>Female =50</td>
</tr>
</tbody>
</table>

Inclusion Criteria showing demographic characteristics of sample.

- A person diagnosed for type II diabetes mellitus at least 2 years ago and still taking treatment
- A person falling within the age range of 40 to 60 years
- A person belonging to middle socio-economic status

- Exclusion Criteria

- A person below 40 and above 60 years of age
- A person belonging to low and higher socio-economic status
- A persons having any other severe disease except diabetes

3.3. Variables of the Study

Following variables were under study in the present investigation:

1. Psychological Well-being
2. Quality of Life
3. Rural/Urban geographical location of diabetic patients
3.4. Scales/Measures used in the Study

3.4.1. Psychological Well-Being Scale

“The Ryff Scales of Psychological Well-Being is a theoretically grounded instrument that specifically focuses on measuring multiple facets of psychological well-being. The Ryff inventory consists of either 84 questions (long form) or 42 questions (medium form). There is also a short form, but it is statistically unreliable. Both the long and medium forms consist of a series of statements reflecting the six areas of psychological well-being”. In the present investigation medium form of the scale was used.

**Scoring System:** Respondents were required to rate statements on a six-point scale, with 1 indicating strong disagreement and 6 indicating strong agreement. Following instructions were given to subjects: Indicate the extent of one’s agreement to the following statements using score range from 1 to 6

3.4.2. Dimensions of well-being included in Ryff’s Scale:

**Autonomy:** Item No. 1, 7, 13, 19, 25, 31, 37

*High scorer:* Is self-determining and independent; able to resist social pressures to think and act in certain ways; regulates behavior from within; evaluates self by personal standards.

*Low scorer:* Is concerned about the expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways.

**Environmental mastery:** Item No. 2, 8, 14, 20, 26, 32, 38

*High scorer:* High scorer has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.

*Low scorer:* Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks the sense of control over external world.
**Personal growth:** Item No. 3, 9, 15, 21, 27, 33, 39

*High scorer:* High scorer has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has the sense of realizing his or her potential; sees improvement in self and behavior over time; is changing in ways that reflect more self-knowledge and effectiveness.

*Low scorer:* Has a sense of personal stagnation; lacks the sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviors.

**Positive relations with others:** Item No. 4, 10, 16, 22, 28, 34, 40

*High scorer:* Has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give and take of human relationships.

*Low scorer:* Has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others.

**Purpose in life:** Item No. 5, 11, 17, 23, 29, 35, 41

*High scorer:* Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for the living.

*Low scorer:* Lacks a sense of meaning in life; have few goals or aims, lacks the sense of direction; does not see the purpose of past life; has no outlook or beliefs that give life meaning.

**Self-acceptance:** Item No. 6, 12, 18, 24, 30, 36, 42

*High scorer:* Possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about past life.

*Low scorer:* Feels dissatisfied with self; is disappointed with what has occurred with past life; is troubled about certain personal qualities; wishes to be different than what he or she is.
Negative Items: 3,5,10,13,14,15,16,17,18,19,23,26,27,30,31,32,34,36,39,41. Scoring system was reversed for these items.

Finally, as per the scoring system of the scale, total score on each dimension was divided 42, and aggregate score on the entire scale was divided by 252 to obtain the final individual score for the purpose of analysis.

**Table 3.2**

**Showing Psychometric Properties of the Ryff Scales of Psychological Well-Being**

<table>
<thead>
<tr>
<th>Scales:</th>
<th>Internal consistency of 20-item parent scale</th>
<th>Test-retest reliability of 20-item parent scale</th>
<th>14-item scale correlation with 20-item parent scale</th>
<th>Internal consistency of 20-item parent scale</th>
<th>Internal consistency of 3-item scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-acceptance</td>
<td>.93</td>
<td>.85</td>
<td>.99</td>
<td>.91</td>
<td>.52</td>
</tr>
<tr>
<td>Positive Relations with others</td>
<td>.91</td>
<td>.83</td>
<td>.98</td>
<td>.88</td>
<td>.56</td>
</tr>
<tr>
<td>Autonomy</td>
<td>.86</td>
<td>.88</td>
<td>.97</td>
<td>.83</td>
<td>.37</td>
</tr>
<tr>
<td>Environmental Mastery</td>
<td>.90</td>
<td>.81</td>
<td>.98</td>
<td>.86</td>
<td>.49</td>
</tr>
<tr>
<td>Purpose in Life</td>
<td>.90</td>
<td>.82</td>
<td>.98</td>
<td>.88</td>
<td>.33</td>
</tr>
<tr>
<td>Personal Growth</td>
<td>.87</td>
<td>.81</td>
<td>.97</td>
<td>.85</td>
<td>.40</td>
</tr>
</tbody>
</table>

**3.5. Quality of Life Scale**

Ferrans and Powers Quality of Life Index (QLI) – Diabetes III Version was used to assess the quality of life of diabetic patients. It covers up following aspects

1. Total Quality of Life Score
2. Health and functioning sub-scale score
3. Social and economic sub-scale score
4. Psychological/spiritual sub-scale score
5. Family sub-scale score.

The scale is divided into two parts: Part 1 represents “satisfaction” and Part 2 represents “importance”.

Items listed below are from both part 1 and part 2
For example, 1. Health refers to question #1 in Part 1 (satisfaction) and question #1 in Part 2 (importance).

3.6. Description of Items

3.6.1. Quality of Life Score

All of the items are used to calculate the total score, which reflects the overall quality of life.

**Health and Functioning Sub-scale**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Health</td>
</tr>
<tr>
<td>2.</td>
<td>Health care</td>
</tr>
<tr>
<td>3.</td>
<td>Energy (fatigue)</td>
</tr>
<tr>
<td>4.</td>
<td>Ability to take care of oneself without help</td>
</tr>
<tr>
<td>5.</td>
<td>Ability to control blood sugar</td>
</tr>
<tr>
<td>6.</td>
<td>Changes made in life because of diabetes</td>
</tr>
<tr>
<td>7.</td>
<td>Control over life</td>
</tr>
<tr>
<td>8.</td>
<td>Chances for living as long as one would like</td>
</tr>
<tr>
<td>9.</td>
<td>Sex life</td>
</tr>
<tr>
<td>10.</td>
<td>Ability to take care of family responsibilities</td>
</tr>
<tr>
<td>11.</td>
<td>Usefulness to others</td>
</tr>
<tr>
<td>12.</td>
<td>Worries</td>
</tr>
<tr>
<td>13.</td>
<td>Things for fun</td>
</tr>
<tr>
<td>14.</td>
<td>Chances for a happy future</td>
</tr>
</tbody>
</table>

**Social and Economic Sub-scale**

14. Friends
16. Emotional support from people other than your family
20. Neighbourhood
21. Home
22/23. Job/not having a job
3.6.2. Scoring System of the Ferrans and Powers Quality of Life Index (QLI)

The inventory includes total scale, health and functioning sub-scale, social and economic sub-scale, psychological/spiritual sub-scale, and family sub-scale. To calculate the scores, the authors recommend following steps:

3.6.2.1. Overall QLI Score (Overall Quality of Life)

Step 1: Recode satisfaction scores

**Description:** To centre the scale of zero, subtract 3.5 from satisfaction response for each item. (This produce responses of $-2.5, -1.5, -0.5, +0.5, +1.5, +2.5$.)

Step 2: Weight satisfaction responses with the paired importance responses.

**Description:** Multiply the recorded satisfaction response by the raw importance response for each pair of satisfaction and importance items.

Step 3: Obtain a preliminary sum for the overall (total) score.
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**Description:** Add together the weighted responses obtained in step 2 for all of the items.

**Step 4:** Obtain the final overall (total) QLI Score

**Description:** To prevent bias due to missing data, divide each sum obtained in step 3 by the number of items answered by that individual. (At this point the possible range for the scores is –15 to +15.) Next, to eliminate negative numbers for the final score, add 15 to every score. This will produce the final overall (total) QLI score. (Possible range for the final scores = 0 to 30).

### 3.6.3. Sub-scale Scores

The same steps are used to calculate sub-scale scores as total scores. The only difference is that the calculations are performed using subsets of items, rather than on all of the items.

**Step 1:** Recode satisfaction scores

**Description:** To center the scale of zero, subtract 3.5 from the satisfaction response for each item. (This will produce responses of –2.5, -1.5, -0.5, 0.5, +1.5, +2.5.) This is exactly the same step as #1 above.

**Step 2:** Weight satisfaction responses with the paired importance responses.

**Description:** Multiply the recorded satisfaction response by the raw importance for each pair of satisfaction and importance items. This is exactly the same step as #2 above.

**Step 3:** Obtain preliminary sum for the sub scale score.

**Description:** Add together the weighted responses obtained in step 2 for the items that compose the sub scale.

**Step 4:** Obtain final sub scale score.

**Description:** To prevent bias due to missing data, divide each sum obtained in step 3 by the number of items answered in that sub scale for that individual. (At this point the possible range for score is –15 to +15. This is the possible range for all four of the sub-scales and the overall (total) score. The possible range is the same for all five scores even though they have different numbers of items because we have divided the preliminary sum by
the number of items answered for each one.) Next, to eliminate negative numbers for the final score, add 15 to every score. It is always the number 15 that is added, regardless of which sub-scale score is being calculated. This will produce the final sub-scale score. (Possible range for the final scores = 0 to 30.) The possible range for the final scores is the same for all four sub-scales and the overall (total) score.

3.6.4. Instructions to the Respondent

PART 1: For each of the following, please choose the answer that best describes how satisfied you are with that area of your life. Please mark your answer by circling the number. There is no right or wrong answer.

PART 2: For each of the following, please choose the answer that best describes how important that area of your life is to you. Please mark your answer by circling the number. There are no right or wrong answers.

3.7. Procedure

Prior to the collection of data following decisions were taken:

1. Chances of subjective biases during data collection should be minimized.
2. High reliability of data must be ensured.
3. The information should be collected in such a way that it must cover all the relevant aspects of the research.
4. A rapport should be established between investigator and respondents.
5. The respondent must be encouraged to express views freely.
6. Adequate time must be given to the respondents to reply to the questions.
7. Necessary information regarding the respondent should be collected through reliable sources prior to the collection of data.

In order to collect the data, an appointment was taken from the respondent, and a rapport was established with them. After the preliminary questioning, it was identified whether the person falls within the inclusion criteria or not. All those persons falling in inclusion criteria were explained instructions for each scale separately. Each subject was tested individually for psychological well-being and quality of life. Subjects were requested to fill up the questionnaires in a comfortable manner. Time
restriction was not imposed on any subject. Great care was taken to remove any misconceptions regarding the proposed study. In order to obtain accurate data the investigator assured them that their responses would be kept strictly confidential and would be used only for the research purpose.

Thus, after taking their correct responses, the data were collected by the investigator from all the respondents, scoring done and further analysis was carried on.

3.8. Statistical Analysis

It is mandatory for every researcher to select a most appropriate statistical technique for the purpose of analysis of the data, but it is not a simple task because the selection of suitable statistical test for the data analysis depends upon the nature of the data and design of the study.

According to the objectives of the present study, it may be pointed out that here it is intended to investigate the Psychological well-being and Quality of Life of rural and urban diabetic patients. A comparative analysis of rural and urban diabetic patients was carried out with respect to Psychological well-being and Quality of Life.

The data obtained from the aforesaid respondents were analysed with the help of t-test in order to determine significance of difference between the comparison groups.

3.9 Ethical Considerations

Following ethical steps were taken

- Full consent from the participants was obtained prior to start the study.
- Respect for the dignity of research participants was kept on priority.
- Privacy and anonymity of respondents are of paramount importance. Every effort was made to protect the privacy of research participants
- An adequate level of confidentiality of the research data was maintained.
- Highest possible level of objectivity in discussions and analyses throughout the research was maintained.
- Every possible effort was made to avoid misleading information, as well as the representation of primary data findings in a biased way.
- Since the research participants were diabetic patients, care was taken to avoid any harm in any ways whatsoever.