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**RESEARCH ARTICLE**

# DIABETIC _ SPECIFIC ROUTINES ASSESSMENT for ADOLESCENT with DIABETES MELLITUS TYPE 1 FROM PARENT PERSPECTIVE

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**ABSTRACT**
**Background and aim: A chronic illness impacts not just the patient, but also the family as a whole, and there is a lot to be gained by including the family in therapy. So, this study aims to assess diabetic-specific routines of adolescents with diabetes mellitus type 1 from the parent perspective and Differences in Parent'report of Specific Diabetic routines with regard to their Socio-demographic variables.**

**Methods: descriptive cross-sectional study design was carried out for the Assessment of Diabetes-Specific Routine for adolescents with Diabetes Mellitus Type 1 from the parent perspective in Diabetes and Endocrinology Center at Al- Nasiriya City from13th of October 2021 to 25th April, 2022 . The sample consists (110) parents selected through purposive sampling. The information was gathered through the use of self-administered instruments which are the diabetes-specific routine scale. The data were analyzed by using SPSS ver-20 and Microsoft Excel (2010) program.**

**Results: the parents expressed a moderate response regards specific diabetic routine for adolescents with T1DM as indicated by moderate mean scores at all studied items of the scale except, the items number (1, 2, 3, 4, 12, 16, 17, 18, 19 and 20) the responses were poor**

**Conclusion: (62.6%) of parents exhibited that the adolescent follows a routine on a moderate level**

*Keywords:parents , diabetes mellitus type 1, specific routine*



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## INTRODUCTION

Diabetes is a term that describes a set of disorders characterized by elevated blood glucose levels. It's caused by a lack of insulin production or action, or both, which can happen for a variety of reasons, leading to protein and lipid metabolic problems (Mobasseri et al., 2020). Globally، T1DM is one of the fastest-growing chronic diseases, accounting for 5 to 10% of all diabetes cases (Mansi & Aziz., 2021). In Iraq, the prevalence of type 1 diabetes mellitus was 159 per 100,000, similar to that in Saudi Arabia, lower than that in Kuwait, but higher than that in Turkey (Zalzala et al., 2020).

A chronic illness impacts not just the patient, but also the family as a whole, and there is a lot to be gained by including the family in therapy. A positive and supportive family atmosphere can help patients feel less stressed, and involving many family members in the condition's management can help patients stick to their medical regimen better (Crespo et al., 2013).

Routines and rituals within the family may be especially important in fostering stability during times of stress and transition. Childbirth with a chronic disease, or the start of a chronic condition in a previously healthy person in the family a significant shift for the family, one that is associated with increased pressure and burden for the entire family not only for the patient (Crespo et al., 2013).

Normal developing responsibilities (e.g., maturation, autonomy, increased freedom, and incomplete development of executive functioning) may restrict routines management for adolescents with T1D, whereas diabetes-specific routines occur when self-care specific tasks are achieved in a steady manner, time, and order (Pierce et al., 2019).

## METHOD

A descriptive cross-sectional study design The study was conducted in Al Nasiriya City (Diabetes and Endocrinology Center) in Thi-Qar governorate, Iraq on parents of adolescents with diabetes mellitus type. The study started on **13th of October 2021 to 25th April, 2022**. Nonrandomized (purposive) study of (110) parents. The Study Instrument Based on the diabetes-specific routine scale, the questionnaire was adopted and developed to assess diabetes-specific routine for parents of adolescents with diabetes (Pierce et al.,2019). This consists of 24-items and is measured on 4-point (Never, Rarely, Sometimes, and Always). To identify the overall parent for adolescent diabetic specific routine, the Mean for total score (Poor= 24-48; Moderate=48.1-72; Good=72.1-96). A Pilot study was done on 10 parents of the adolescent with diabetes mellitus recruited from the Diabetes and Endocrinology Center at Al- Nasiriya City between **13th October 2021 to 25th April, 2022** . the inclusion criteria that use to select the sample the adolescent who are diagnosed with T1DM type 1, adolescents and their parents who are of different education and adolescents who are both genders. But the exclusion criteria was adolescents who disagree to take part or refused to participate in the present study. The sample of the pilot study was excluded from the total sample. The reliability of study instruments was determined by using Alpha Cronbach test coefficient which revealed that r= (0.74).

SPSS version (20) and Microsoft Excel (2010) programs to statistically analyze the data collected from the study sample, find the relationships between the variables and obtain the research's final results based on a set of statistical tests.

## RESULTS

Table (1) shows (110) parents of type 1 diabetic adolescents who participated in this study their aged fathers and mothers ranged from 30-39 years old were 63 (57.3%) for each of them respectively social status-related findings, the majority of 96 (87.3%) study participants exhibited live together as compared with those who are separated 14 (12.7%). In regards to parents' lives, it is obvious that the majority of the studied sample was alive, be it a father 100 (90.9%) or a mother 107 (97.3%) and residents in urban areas 88 (80%).In terms of education level, the fathers of adolescents were college graduates 40 (36.4%) as compared with adolescents' mothers were illiterate 28 (25.5%). Monthly income associated findings, most of the study participants were make <300 thousand dinars 59 (53.6%) and Does not work 47 (42.7%).

Table (2) this table demonstrated that the parents expressed a moderate responses regards specific diabetic routine for adolescents with T1DM as indicated by moderate mean scores at all studied items of the scale except, the items number (1, 2, 3, 4, 12, 16, 17, 18, 19 and 20) the responses were poor as indicated by low mean scores, as well as, the items number (6, 8, and 9) the responses were good as indicated by higher mean scores.

Table(3) According to the parents report of diabetic routine for adolescents with type I DM, findings illustrated that the (62.6%) of parents exhibited that the adolescent follow a routine on a moderate level

Table (4) Findings demonstrated that there were no significant differences in specific diabetic routines with regardto fathers *(p=0.214*) and mothers (*p=0.439*) age groups.

Table (5) Findings demonstrated that there were significant differences in specific diabetic routine wregardarto ds social state (*t=5.084; p=0.000*) between those who are live together *(M=2.32*) and those who are separated (*M=1.63*).

Table (6) Findings demonstrated that there were significant differences in specific diabetic routine with regard fathers *(t=6.436; p=0.000*); and no significant differences in specific diabetic routine with regard mothers (*t=0.381; p=0.704*).

Table (7) Findings demonstrated that there were no significant differences in specific diabetic routine with regards residents **(p=0.064).**

Table(8) Findings demonstrated that there were significant differences in specific diabetic routine with regard fathers education *(p=0.000*) and mothers education (*p=0.000*).

Table(9) Findings demonstrated that there were significant differences in specific diabetic routine with regard moto nthly income *(p=0.00*).

Table(10) Findings demonstrated that there were no significant differences in specific diabetic routine with regard parents occupation *(p=0.713*).

**Table 1.Distributtion of Adolescents their Parents SDVs**

| SDVs | Classification | Freq. | % |
|---|---|---|---|
| Father Age | 20-29 years | 6 | 5.5 |
| | 30-39 years | 63 | 57.3 |
| | 40-49 years | 30 | 27.2 |
| | 50 and older | 11 | 10.0 |
| | Total | 110 | 100.0 |
| Mothers Age | <30 years | 34 | 30.9 |
| | 30-39 years | 57 | 51.8 |
| | 40-49 years | 19 | 17.3 |
| | Total | 110 | 100.0 |
| Social Status of Parents | Together | 96 | 87.3 |
| | Separated | 14 | 12.7 |
| | Total | 110 | 100.0 |
| Fathers alive | Yes | 100 | 90.9 |
| | No | 10 | 9.1 |
| | Total | 110 | 100.0 |
| Mothers alive | Yes | 107 | 97.3 |
| | No | 3 | 2.7 |
| | Total | 110 | 100.0 |
| Residents | Urban | 88 | 80.0 |
| | Rural | 22 | 20.0 |
| | Total | 110 | 100.0 |
| Fathers education | Illiterate | 15 | 13.6 |
| | Elementary school | 22 | 20.0 |
| | Intermediate school | 19 | 17.3 |
| | Secondary school | 14 | 12.7 |
| | College and above | 40 | 36.4 |
| | Total | 110 | 100.0 |
| Mothers education | Illiterate | 28 | 25.5 |
| | Elementary school | 23 | 20.9 |
| | Intermediate school | 25 | 22.7 |
| | Secondary school | 12 | 10.9 |
| | College and above | 22 | 20.0 |
| | Total | 110 | 100.0 |
| Monthly income | <300 Thousand dinars | 59 | 53.6 |

| | | | |
|---|---|---|---|
| | 300-600 Thousand dinars | 14 | 12.7 |
| | 601-900 Thousand dinars | 22 | 20.0 |
| | 901-1,200 Thousand dinars | 15 | 13.7 |
| | Total | 110 | 100.0 |
| Occupation | Does not work | 47 | 42.7 |
| | Unskilled worker | 27 | 24.5 |
| | Semi-skilled worker | 24 | 21.9 |
| | Professional | 12 | 10.9 |
| | Total | 110 | 100.0 |

## Table 2. Parents Report Diabetes-Specific Routine for Adolescents

| List | Parents Report | Weighted | Freq. | % | *M.s ±SD* | *Ass.* |
|---|---|---|---|---|---|---|
| 1 | When my adolescent's blood sugar is high, he or she tests for ketones routinely. | Never | 87 | 79.1 | *1.42±0.913* | *Poor* |
| | | Rarely | 7 | 6.4 | | |
| | | Sometime | 8 | 7.3 | | |
| | | Always | 8 | 7.3 | | |
| 2 | My adolescent's diabetic supplies and medical prescriptions are refilled by following a routine. | Never | 94 | 85.5 | *1.26±0.699* | *Poor* |
| | | Rarely | 6 | 5.5 | | |
| | | Sometime | 7 | 6.4 | | |
| | | Always | 3 | 2.7 | | |
| 3 | The adolescent does not take her/his prescribed insulin either because he/she forgets or deliberately did not take it. | Never | 75 | 68.2 | *1.54±0.915* | *Poor* |
| | | Rarely | 17 | 15.5 | | |
| | | Sometime | 11 | 10.0 | | |
| | | Always | 7 | 6.4 | | |
| 4 | When my adolescent is at school and has a low blood sugar level , he or she will be supervised routinely. | Never | 90 | 81.8 | *1.46±1.037* | *Poor* |
| | | Rarely | 3 | 2.7 | | |
| | | Sometime | 3 | 2.7 | | |
| | | Always | 14 | 12.7 | | |
| 5 | When my adolescent is away from home, he or she maintains adherence for his /her diabetic regimen by following a routine. | Never | 39 | 35.5 | *2.61±1.361* | *Moderate* |
| | | Rarely | 13 | 11.8 | | |
| | | Sometime | 9 | 8.2 | | |
| | | Always | 49 | 44.5 | | |
| 6 | My adolescent treats high blood glucose levels by following a routine such as | Never | 11 | 10.0 | *3.48±1.002* | *Good* |

| | | | | | | |
|---|---|---|---|---|---|---|
| | administering more insulin and testing the glucose level after 2 hours | Rarely | 8 | 7.3 | | |
| | | Sometime | 8 | 7.3 | | |
| | | Always | 83 | 75.5 | | |
| 7 | My adolescent follows his or her plan of meals routinely. | Never | 26 | 23.6 | *2.77±1.275* | *Moderate* |
| | | Rarely | 26 | 23.6 | | |
| | | Sometime | 5 | 4.5 | | |
| | | Always | 53 | 48.2 | | |
| 8 | My adolescent calculates her/his dose of insulin routinely each time of snack or meal. | Never | 11 | 10.0 | *3.46±0.925* | *Good* |
| | | Rarely | 0 | 0.0 | | |
| | | Sometime | 26 | 23.6 | | |
| | | Always | 73 | 66.4 | | |
| 9 | My adolescent treats low blood sugars by following a routine such as testing glucose level, then eating tablets of glucose, waiting for 15 minutes, and then testing again. | Never | 12 | 10.9 | *3.41±1.069* | *Good* |
| | | Rarely | 13 | 11.8 | | |
| | | Sometime | 2 | 1.8 | | |
| | | Always | 83 | 75.5 | | |
| 10 | My adolescent tests his/her blood glucose level routinely. | Never | 19 | 17.3 | *3.00±1.192* | *Moderate* |
| | | Rarely | 20 | 18.2 | | |
| | | Sometime | 12 | 10.9 | | |
| | | Always | 59 | 53.6 | | |
| 11 | When my adolescent is away from home such as in school, restaurants, or at a house of friends, family member's house, He/ she plans for meals eaten in these places by following a routine routinely | Never | 53 | 48.2 | *2.33±1.383* | *Moderate* |
| | | Rarely | 6 | 5.5 | | |
| | | Sometime | 12 | 10.9 | | |
| | | Always | 39 | 35.5 | | |
| 12 | My adolescent consumes food that is not permitted to consume routinely. | Never | 59 | 53.6 | *1.98±1.211* | *Poor* |
| | | Rarely | 16 | 14.5 | | |
| | | Sometime | 13 | 11.8 | | |
| | | Always | 22 | 20.0 | | |
| 13 | My adolescent does not test her or his blood glucose level either because of forgetfulness or was on purpose | Never | 49 | 44.5 | *2.32±1.321* | *Moderate* |
| | | Rarely | 10 | 9.1 | | |
| | | Sometime | 17 | 15.5 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Always | 34 | 30.9 | | |
| 14 | My adolescent takes her/ his insulin by following a routine (either through injections or using an insulin pump machine). | Never | 14 | 12.7 | *3.36±1.114* | *Good* |
| | | Rarely | 13 | 11.8 | | |
| | | Sometime | 2 | 1.8 | | |
| | | Always | 81 | 73.6 | | |
| 15 | My adolescent selects and rotates the pump or injection site by following a routine. | Never | 26 | 23.6 | *2.88±1.239* | *Moderate* |
| | | Rarely | 13 | 11.8 | | |
| | | Sometime | 19 | 17.3 | | |
| | | Always | 52 | 47.3 | | |
| 16 | Routinely before exercise, my adolescent prepares for the possibility of low glucose level occurrence such as eating snacks before doing exercise, decreasing the dose of insulin, and carrying the supplies needed to treat low glucose level. | Never | 82 | 74.5 | *1.43±0.818* | *Poor* |
| | | Rarely | 11 | 10.0 | | |
| | | Sometime | 14 | 12.7 | | |
| | | Always | 3 | 2.7 | | |
| 17 | My adolescent eats snacks by following a routine. | Never | 53 | 48.2 | *1.91±1.014* | *Poor* |
| | | Rarely | 21 | 19.1 | | |
| | | Sometime | 28 | 25.5 | | |
| | | Always | 8 | 7.3 | | |
| 18 | My adolescent plans for his/ her diabetes care on special occasions routinely such as sleepovers and parties such as a birthday party. | Never | 80 | 72.7 | *1.56±1.053* | *Poor* |
| | | Rarely | 13 | 11.8 | | |
| | | Sometime | 2 | 1.8 | | |
| | | Always | 15 | 13.6 | | |
| 19 | At school, my adolescent adheres to her or his diabetic regimen by following a routine. | Never | 70 | 63.6 | *1.98±1.361* | *Poor* |
| | | Rarely | 4 | 3.6 | | |
| | | Sometime | 4 | 3.6 | | |
| | | Always | 32 | 29.1 | | |
| 20 | My adolescent accesses diabetes equipment or school's emergency supplies by following a routine. | Never | 105 | 95.5 | *1.06±0.311* | *Poor* |
| | | Rarely | 3 | 2.7 | | |
| | | Sometime | 2 | 1.8 | | |
| | | Always | 0 | 0.0 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 21 | When my adolescent is out of the house, he or she always carries emergency supplies such as glucose pills that are needed for treating low glucose level. | Never | 51 | 46.4 | *2.22±1.296* | *Moderate* |
| | | Rarely | 14 | 12.7 | | |
| | | Sometime | 14 | 12.7 | | |
| | | Always | 31 | 28.2 | | |
| 22 | While my adolescent is participating in extracurricular activities such as clubs or sports, he/she adheres to his/her diabetes regimen by following a routine. | Never | 70 | 63.6 | *2.03±1.394* | *Moderate* |
| | | Rarely | 0 | 0.0 | | |
| | | Sometime | 6 | 5.5 | | |
| | | Always | 34 | 30.9 | | |
| 23 | While my adolescent is spending time at our house with friends, he or she adheres to his/ her diabetes regimen by following a routine. | Never | 62 | 56.4 | *2.13±1.357* | *Moderate* |
| | | Rarely | 3 | 2.7 | | |
| | | Sometime | 13 | 11.8 | | |
| | | Always | 32 | 29.1 | | |
| 24 | While my adolescent is spending time away from home with friends, he/ she adheres to his or her diabetes regimen by following a routine. | Never | 62 | 56.4 | *2.06±1.308* | *Moderate* |
| | | Rarely | 7 | 6.4 | | |
| | | Sometime | 13 | 11.8 | | |
| | | Always | 28 | 25.5 | | |

*"(MS) Mean of Scores, (SD) Standard deviation, Level of Assessment (Poor=1-2, Moderate=2.1-3, Good= 3.1-4)"*

**Table 3. Overall Parents Report for Adolescents Diabetes-Specific Routine**

| Routine for T1DM | Freq. | % | *M ± SD* |
|---|---|---|---|
| Poor Routine | 30 | 27.3 | *53.78±12.78* |
| Moderate Routine | 70 | **63.6** | |
| Good Routine | 10 | 9.1 | |
| *Total* | 110 | 100.0 | |

*M: Mean for total score, SD=Standard Deviation for total score*

(*Poor= 24-48; Moderate=48.1-72; Good=72.1-96*)

**Table 4. Statistical Differences in Specific Diabetic Routine with regards Parents Age (*n=110*)**

| Specific-Diabetic Routine | Source of variance | Sum of Squares | d.f | Mean Square | F | *Sig.* |
|---|---|---|---|---|---|---|
| Fathers Age | Between Groups | 1.273 | 3 | .424 | 1.518 | *.214* |
| | Within Groups | 29.638 | 106 | .280 | | |
| | Total | 30.911 | 109 | | | |
| Mothers Age | Between Groups | .472 | 2 | .236 | .829 | *.439* |
| | Within Groups | 30.439 | 107 | .284 | | |
| | Total | 30.911 | 109 | | | |

*d.f: Degree of freedom, F: F-statistic.*

***Table( 5)Statistical Differences in Specific Diabetic Routine with regards Parents Social Status(n=110)***

| | *Social Statu* | *Mea* | *S* | *t-valu* | *d.* | *Sig.* |
|---|---|---|---|---|---|---|
| *Diabetes-Specific Routir* | *Together* | *2.3* | *.4* | *5.08* | *10* | *.000* |
| | *Separated* | *1.6* | *.5* | | | |

*SD: Standard deviation, t: t-test, d.f: Degree of freedom, p: Probability value.*

*Table( 6)* ***Statistical Differences in Specific Diabetic Routine with regards Parents Alive (n=110)***

| *Diabetes-Specific Ro* | *Rating* | *Mea* | *S* | *t-valu* | *d.* | *Sig.* |
|---|---|---|---|---|---|---|
| *Father Alive* | *Yes* | *2.3* | *.4* | *6.43* | *10* | *.000* |
| | *No* | *1.3* | *.4* | | | |
| *Mothers Alive* | *Yes* | *2.2* | *.5* | *.381* | *10* | *.704* |
| | *No* | *2.1* | *.0* | | | |

*SD: Standard deviation, t: t-test, d.f: Degree of freedom, p: Probability value*

***Table (7)Statistical Differences in Specific Diabetic Routine with regards Parents Residents (n=110)***

| | Residents | Mea | S | t-valu | d. | Sig. |
|---|---|---|---|---|---|---|
| Diabetes-Specific Routir | Urban | 2.2 | .5 | 1.87 | 10 | .064 |
| | Rural | 2.0 | .5 | | | |

***Table(8) Statistical Differences in Specific Diabetic Routine with regards Parents Education (n=110)***

| Specific-Diabetic R | Source of varia | Sum of Sq | d. | Mean Sc | F | Sig. |
|---|---|---|---|---|---|---|
| Fathers Educati | Between Grou | 16.31 | 4 | 4.07 | 29.3 | .000 |
| | Within Group | 14.59 | 10 | .13 | | |
| | Total | 30.91 | 10 | | | |
| Mothers Educati | Between Grou | 7.94 | 4 | 1.98 | 9.08 | .000 |
| | Within Group | 22.96 | 10 | .21 | | |
| | Total | 30.91 | 10 | | | |

**Table(9)Statistical Differences in Specific Diabetic Routine with regards Parents Education (*n=110*)**

| Specific-Diabetic Routine | Source of variance | Sum of Squares | d.f | Mean Square | F | *Sig.* |
|---|---|---|---|---|---|---|
| Monthly Income | Between Groups | 5.848 | 3 | 1.949 | 8.244 | .000 |
| | Within Groups | 25.063 | 106 | .236 | | |
| | Total | 30.911 | 109 | | | |

Table (10)Statistical Differences in Specific Diabetic Routine with regards to Parents Occupation (*n=110*)

| Specific-Diabetic Routine | Source of variance | Sum of Squares | d.f | Mean Square | F | *Sig.* |
|---|---|---|---|---|---|---|
| Occupation | Between Groups | .394 | 3 | .131 | .457 | |
| | Within Groups | 30.517 | 106 | .288 | | |
| | Total | 30.911 | 109 | | | |

## DISCUSSION

Regarding to the study sample of (110) parents of type 1 diabetic adolescents who participated in this study their aged fathers and mothers ranged 30-39 years old were 63 (57.3%) for each them respectively Regarding this results are nearly agree with study done in iraq by Shukur et al., (2021) which revealed that fathers, 58% were > 35 years old and mother , 51.6 % were > 35 years old, is results not agree with study done by de Beaufort et al., (2021) mean diabetes period: 3 ± 1.7 years) participated. 23/24 parents Related to social status related findings, the majority of 96 (87.3%) study participants exhibited live together as compared with those who are separated 14 (12.7%) these results is supported by study done in Iraq by Naser, ( 2019) which revealed that the majoerty of study sample social status were marriage and account more that (90.0%) of all study sample mother and father also there is no related international studies for spported this results.

In regards with parents live, it is obvious that the majority of studied sample were alive, be it a father 100 (90.9%) or a mother 107 (97.3%) and residents in urban areas 88 (80%).

In terms of education level, the fathers of adolescents were college graduated 40 (36.4%) as compared with adolescents mothers were illiterate 28 (25.5%) these results is agree with study done by (Naser, 2019) which revealed that the majorty of study sample father and mather at secondary school 38.0 and 33.0 respectively these results are not agreement with study done by Tao et al., (2017)which revealed that whose parents had an educational level of senior high school or below.

Monthly income associated findings, most of study participants were make <300 thousand dinars 59 (53.6%) and Does not work 47 (42.7%).this results are not consienet with the study done by Thomas et al., (2018) Median annualy of family income ranged from $70,000 to $99,999. lesser adherence less insulin use, , and poorer glycemic control connected with Lower family income. Bivariate links with income, parenting variables and glycemic control adherence.

Regarding to this table (2and 3) demonstrated that the parents expressed a moderate responses regards specific diabetic routine for adolescents with T1DM as indicated by moderate mean scores at all studied items of the scale except, the items number (1, 2, 3, 4, 12, 16, 17, 18, 19 and 20) the responses were poor as indicated by low mean scores, as well as, the items number (6, 8, and 9 ) the responses were good as indicated by higher mean scores. According to the parents report of diabetic routine for adolescents with type I DM, findings illustrated that the (62.6%) of parents exhibited that the adolescent follow a routine on a moderate level as described by moderate mean score (±SD) = 53.78 (±12.78) these results spported by Ouzouni et al., (2018) mention that adolescent sensed more supported by their families. Overweight teenagers (p = -.333, r =.018), as well as taller respondents (p = -.323, r =.022), received less support for of insulin. Over all Respondents who use additional insulin units felt less supported (p = -.268, r = .047) and during blood checks (p = -.290, r = .034). Adolescents who took more blood glucose readings felt less supported when it came to their meal plan (p =-.307, r =.028), which they followed only seldom (p =-.322, r =.023). also agreement with study done by Moore et al., (2013) which revealed tha Parent-reported family dysfunction, as well as the impact of illness on the family system and parental stress, were all high. greater adolescent behavioral issues, Lower levels of family functioning, and worse teenage mental wellbeing were linked to higher HbA1c (poor metabolic management) and less appropriate adolescent self-care.

The analysis of variance showed that there were no-significant differences in specific diabetic routine with regard fathers *(p=0.214*) and mothers (*p=0.439*) age groups (table 4-9-1). Because no matter how old or young the age, parents still care for their adolescents, so age is an ineffective factor in caring for children with diabetes. The absence of moral differences indicates that parents, regardless of their age, provide the same diabetes-related care for their children. Previous studies also reached our conclusion that age is not a factor affecting diabetes routine between parents and children or adolescents.

This findings is supported by Streisand & Monaghan (2014), who confirmed in their findings that the parent age is not considered an influential factor in the diabetes challenges facing their children, as they do everything they have to take care of their children with diabetes without restricting their age. Another, confirmed that there were no differences in diabetic children and parents age in terms of diabetic management (Laroche et al., 2009). As well as, there were no correlation between daily activities of living among children with diabetes mellitus and their parents age (Zysberg & Lang, 2015).

According to Parents Report of Specific Diabetic Routine and their Social State Findings

demonstrated that there were significant differences in specific diabetic routine with regards social state (*t=5.084*; *p=0.000*) between those who are live together *(M=2.32*) and those who are separated (*M=1.63*) (table 4-9-2). In terms of the care that a teenager receives, there is a difference between the one whose parents live together and those who are separated (Fig. 4-3). A diabetic teen whose parents live together receives a much better routine than a teen whose parents live separately.

This findings com in agreement with findings of Kimbell et al. (2021), it was confirmed in their results that there are differences in the care of young children with diabetes and the marital status of their parents (the differences were in favor of those who live together in terms of attention and neglect from the separated). The effect of the parents' social status positively affects their living together in improvement children diabetes mellitus and negatively affects their separation (Jacquez et al., 2008). Peters et al. (2011), stated that the children with type I DM receive inadequate diabetes management support in terms of together and separated parents. Parental separation negatively affects young children and adolescents in managing diabetes (Delamater et al., 2018).

According to Parents Report of Specific Diabetic Routine and its Life Findings demonstrated that there were significant differences in specific diabetic routine with regard fathers *(t=6.436*; *p=0.000*); and no significant differences in specific diabetic routine with regard mothers (*t=0.381*; *p=0.704*) (table 4-9-3). The loss of the father is considered an influencing factor in the diabetic routine, as the mother alone cannot provide a routine for her child, only the interest in his life and school matters. So there is a highly difference in the diabetic routine between those whose father lives and those who do not (Fig. 4-4). This findings come in line with findings of Banks et al. (2020), there are challenges in managing diabetes among children, depending on the participation of parents in order to take care of their child's condition, and that the loss of one of the parents is a factor that negatively affects the management of diabetes.

According to Parents Report of Specific Diabetic Routine and their Residents There is no difference in the diabetic routine (*t= 1.871*; *p=0.064*) between those who live in urban areas (*M=2.28*) and those who live in rural areas (*M=2.05*). Housing is not considered an important factor in the results, and it cannot be worked on in improving the diabetic routine (table 4-9-4). This findings com consisting with Pierce (2013), showed that the residents factors not associated with diabetic improve routine. There is no diabetic routine among those who live in the countryside or the countryside (ADA, 2012).

According to Parents Report of Specific Diabetic Routine and their Education Level The analysis of variance (ANOVA) showed that there were significant differences in specific diabetic routine with regard fathers education *(p=0.000*) and mothers education (*p=0.000*) (table 4-9-5). Through the results, college and above is significantly associated with better specific diabetic routine among both parents "fathers (Fig. 4-5) and mothers (Fig. 4-6)". There were significant association between diabetic routine and parent education as confirmed by Jaser (2011), the higher education is significantly associated with improved diabetic routine. Parents cannot support their children diabetic due to lack of knowledge and low level of education (Ouzouni et al., 2018). A poor diabetic routine is significantly associated with low education level among parents (Dedov et al., 2018).

According to Parents Report of Specific Diabetic Routine and their Income Findings demonstrated that there were significant differences in specific diabetic routine with regard monthly income *(p=0.00*) (table 4-9-6). The differences were in favour parents who 9000-1200 Thousand dinars/ month (Fig. 4-7), because they can meet the requirements of routine, economic status plays an important role in meeting diabetes-related needs.

There were poor perspective in diabetic routine among parents diabetic children due to poor economic status (Mellin et al., 2014). Parents cannot be relied upon to manage diabetes because of the poor economic situation (Levitsky & Misra, 2020). There were significant correlation (positive) between diabetic specific routine and economic status "poor diabetic routine associated with poor economic status" (Moore et al., 2013).

According to Parents Report of Specific Diabetic Routine and their Occupation Findings demonstrated that there were no significant differences in specific diabetic routine with regard parents occupation *(p=0.713*) (table 4-9-7). The diabetic specific routine not influenced by parents occupation because no matter how many professions, parents give everything they have to meet the needs of their children with diabetes. This findings is supported previous studies confirmed that the occupation no associated with diabetic routine and management (Trubey et al. 2015; Hassan et al., 2017; Goethals et al., 2021).

## CONCLUSIONS

**according to the parent's report of diabetic routine for adolescents with TIDM, about (62.6%) of adolescents follow the routine on a moderate level.**

## ETHICAL CONSIDERATIONS COMPLIANCE WITH ETHICAL GUIDELINES

**Participent were informed about the current study and its aims, and then verbal consent was obtained from participants to participate in the study. Also, told that they have the right to agree or refuse to participate in the study. Regarding confidentiality and anonymity of participants, ethical approval was obtained from the ethical committee of research in the faculty of Nursing/ University of Baghdad.**

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## AUTHOR'S CONTRIBUTIONS

**Study concept; Writing the original draft; Data collection; Data analysis and Reviewing the final edition by all authors.**

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