

Ego defense mechanisms, medication adherence and self-management of the patients with type 2 diabetes

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Abstract

Objective: To explore relationship involving Ego Defence Mechanism, Medication Adherence and Self-Management of patients with type 2 diabetes.

Method: The cross-sectional co-relational study was conducted at the Government College University, Lahore, Pakistan, from November 2017 to November 2018, and comprised diabetics aged 25-55 years. Other than demographic information, data was collected using the Urdu versions of the Defense Style Questionnaire, the Medication Adherence Scale, and the Diabetic Self-management Questionnaire. Data was analysed using SPSS 22.

Results: Of the 150 patients, 75(50%) each were females and males. Mature defence mechanisms, like sublimation, suppression and humour, were significant predictors of self-management ($p < 0.001$), and mature defence mechanism, like sublimation, was a significant predictor of medication adherence ($p < 0.05$). Females were high on neurotic defence mechanism, like pseudo-altruism, compared to the males ($p = 0.001$).

Conclusion: Medication adherence and self-management were found to be dependent on mature defence mechanisms.

Keywords: Ego defence mechanisms, Medication adherence, Self-management, Immature defences, Mature defences, Neurotic defences. (JPMA 71: 624; 2021)

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Introduction

Diabetes mellitus (DM) is a universal problem affecting individuals of every age, causing a number of psychological and physical issues that affect lives. It is prevalent significantly and increasingly in the South Asian region.¹ According to a recent study in Pakistan, the prevalence of type 2 DM (T2DM) is 16.98% and the prevalence of pre-diabetes is 10.91%. The prevalence of DM is recorded significantly different based on age, education, body mass index (BMI), blood pressure (BP) and family history of T2DM. The findings further depict that 26.30% prevalence was highest in T2DM patients aged 51-60 years.²

DM is characterised as a group of many metabolic disorders caused by hyperglycaemia, which may cause chronic long-term defects of eyes, nerves, heart, kidneys and blood vessels.³

The tripartite model is based on the notions of psychoanalysis coining as the origin of defence mechanism theory. Id works on pleasure principles, ego on reality principles and super-ego on moral principles. The id generates instincts of gratification, while the ego serves as judge on the gratification of the instinct as a

threat to the self. When the risk is found to be great, the defence mechanism is presented by ego to reduce id's impulse. These operations are denoted as defence mechanisms.⁴

A study⁵ presented a combination of vertical and horizontal approaches in a developmental model of defence mechanism which depicted a timeline with hierarchy model based on maturity level. This hierarchical model is interlinked with a second pathology-based hierarchy in which defences on the lowest level are labelled as "psychotic", indicating severity of pathology, like conversion and splitting. The next level of defence mechanism is categorised as "immature".

Patients who are diagnosed with diabetes often develop anxiety over the expected self-care they have to follow strictly. To relieve this anxiety, they use denial as defence mechanism. In this situation, denial serves as an extremely strong defence mechanism. As a consequence of denying, the corresponding anxiety is taken care of immediately.⁶

Researchers studied ego defence mechanisms on three groups of early adolescents; non-psychotic psychiatric patients, diabetic patients and healthy students of high schools. Results demonstrated denial defence mechanism more than asceticism in these groups. Patients with psychiatric illness had distinguished defence-using profile

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compared to the two other groups. A positive relationship was found in ego defence mechanisms, like suppression, altruism and intellectualisation, with an independent measure of ego. On the other hand, ego defence mechanisms, like acting out, denial, avoidance, projection, displacement and repression, were negatively associated with independent measure of ego.⁷

An indigenous research discovered immature defences, like isolation, projection, denial, displacement, somatisation, rationalisation, dissociation and passive aggression, more in depressive patients.⁸ Related to gender differences in using ego defence mechanisms in adolescents, a study demonstrated that boys got higher scores on the defence mechanisms, like outward defence projection and aggression, compared to females who scored adequately against self-turning.⁹

Adherence is the patient's willingness for prescribed medication by the physician.¹⁰ The management of diabetes usually contains exercise, medication, diet and monitoring of blood sugar, and is challenging for the patients.¹¹ It is very common for people with T2DM to have trouble in performing all the self-care suggested by their physician. Diabetics need to fulfill the challenging necessities of their management and this can induce fear of disappointment.¹² Self-management of diabetics is closely linked to the self-care concept, which can be associated with the practice of actions that individuals start and perform on their own in maintaining life, health and well-being.¹³ Diabetes self-management is also associated with age of the patients. Researchers found that people in good diabetic control were identified at an older age and had larger coping skills, especially in relation to their diet management. This can be due to the past experience learnt by the older age people with diabetes, such as information obtained from family experiences. The determination of T2DM individuals may also reproduce their experience in facing challenges in the past.¹⁴

The current study was planned to explore relationship involving Ego Defence Mechanism, Medication Adherence, and Self-Management of T2DM.

Patients and Methods

The cross-sectional co-relational study was conducted at the Government College University, Lahore, Pakistan, from November 2017 to November 2018. The sample size was estimated using OpenEpi calculator¹⁵ with 95% confidence interval (CI), 5% margin of error and 50% sample proportion. The sample was raised using purposive non-probability sampling technique. Those included were T2DM patients aged 25-55 years. Those who could not read and write, with type I and gestational

diabetes, patients with diabetic complications, other chronic diseases, those with mental retardation and other physical abnormalities or with amputation were excluded.

Demographic information was collected using a questionnaire that sought name (optional), age, gender, onset age, level of glycated haemoglobin (HbA1c), marital status, duration of disease, profession, family monthly income, use of insulin and insulin timings, duration of treatment, last appointment, psychiatric and physical illness profile etc.

Data collection tools included the shortened version of the Defence Style Questionnaire (DSQ)¹⁶ having 28 items. It is a 1-9 point rating scale ranging from "Strongly Agree" to "Strongly Disagree". The Cronbach's alpha for the three styles were 0.64, 0.72 and 0.61. The Urdu version of DSQ¹⁷ was used after getting permission from the author. Of the 29 items, 24 were drawn from the same questionnaire, while the remaining four were translated by using Mapi guidelines for translation provided by Mapi research institute that works of linguistic validation and cross cultural translations.¹⁸

Morisky Medication Adherence Scale (MMAS-8)¹⁹ has 8 items. Response choices are "yes" or "no". Total scores on the MMAS-8 range from 0 to 8, with scores of 8 indicating high adherence, 7-6 medium adherence, and <6 low adherence. Urdu version²⁰ of the tool was used having Cronbach's alpha 0.70.

The Diabetic Self-management Questionnaire (DSMQ)²¹ is a 16-item questionnaire used to measure self-care actions related with glycemic control, with a Cronbach's alpha value of 0.84. The Urdu version²² of the tool was used after formal permission taken via e-mail.

Data was collected after permission from different government hospitals and private clinics, and informed consent was taken from all the subjects. After data collection, the questionnaires were scored and coded quantitatively. Participants with poor self-management were psycho-educated about their illness and significance of treatment. Counselling and cognitive behavioural therapeutic techniques, like cost and benefit analysis and cognitive restructuring, were used when needed. All mandatory ethical guidelines were followed and ethical clearance certificate was obtained from Ethical Review Committee of the institution.

Data was analysed using SPSS 22. Hierarchical regression analysis was used to see the predictions of medication adherence and self-management of the patients while keeping the level of significance at $p < 0.001$. The gender

difference was analysed using t-test with significance level $p < 0.001$ and CI 95%.

Results

Of the 150 patients, 75(50%) each were females and

males. Hierarchical regression analysis presented two groups to find the predictors of self-management of T2DM patients. Suppression was a negative significant predictor, while sublimation and humour were significant positive predictors of self-management (Table-1).

Table-1: Hierarchical Regression Analysis Assessing the Predictors of Self-Management of the patients with Type 2 Diabetes (N=150).

Predictors	Group 1		β	Group 2		β
	B	SE		B	SE	
Gender	-2.64	7.02	-0.18	-34.83	1.02	-2.41***
Age	-0.01	0.66	-0.02	1.03	0.06	1.63***
Education	1.35	3.24	0.26	-18.5	0.6	-3.52***
Marital Status	-0.29	4.31	-0.03	15.46	0.56	1.86***
Profession	-0.55	1.67	-0.1	14.6	0.46	2.78***
Onset Age	-0.13	0.31	-0.22	-0.82	0.03	4.34***
Duration of Illness	-0.09	2.7	-0.02	-3.01	0.21	-.54***
Treatment regimen (Immediate/Delayed)	6	11.63	0.54	113.31	3.32	10.25***
Schedule of visit	-1.01	1.49	-0.3	-3.31	0.13	-.98***
Regular check-up	-10.99	7.16	-0.99	-72.48	1.91	-6.56***
HbA1c level	-17.08	16.92	-0.71	-90.34	2.34	-3.77***
Insulin intake	4.74	9.54	0.2	28.62	1.17	1.19***
Timing of insulin	-1.71	7.23	-0.12	-22.68	0.84	-1.57***
Physical Illness	2.99	15.08	0.25	28.2	1.48	2.39***
Psychiatric Illness	11.05	7.52	0.64	-11.87	0.98	-.69***
Suppression				-3.49	0.1	-3.14***
Sublimation				1.333	0.05	.95***
Humour				8.662	0.25	8.01***
ΔR^2			-0.02			0.99

Note. *** $p < 0.001$

HbA1c: Glycated haemoglobin.

Table-2: Hierarchical Regression Analysis Assessing the Predictors of Medication Adherence of the patients with Type 2 Diabetes (N=150).

Predictors	Group 1		β	Group 2		β
	B	SE		B	SE	
Gender	-0.11	0.65	-0.02	-0.86	0.8	-.18**
Age	0.12	0.05	.39**	0.13	0.05	.42**
Education	-0.86	0.38	-.31*	-0.9	0.41	-.32*
Marital Status	-1.17	0.51	-.23*	-1.03	0.5	-0.2
Profession	-0.45	0.31	-0.21	-0.11	0.36	-0.05
Onset Age	-0.02	0.04	-0.06	-0.04	0.04	-0.11
Duration of Illness	-0.09	0.36	-0.03	0.03	0.36	0.01
Treatment regimen (Immediate/Delayed)	0.41	0.53	0.08	0.74	0.54	0.15
Schedule of visit	-0.59	0.21	-.30**	-0.59	0.21	-.30**
Regular check-up	-0.2	0.68	-0.03	0.24	0.7	0.04
HbA1c level	-0.92	1.35	-0.07	-0.7	1.37	-0.05
Insulin intake	-0.15	0.77	-0.02	-0.02	0.76	0
Timing of insulin	-1.17	0.52	-.25**	-1.23	0.51	-.26*
Physical Illness	1.64	0.59	.33**	2.21	0.62	.44**
Psychiatric Illness	4.9	0.95	.59***	3.3	1.24	.39*
Suppression				0.03	0.07	0.06
Sublimation				0.18	0.07	.31*
Humour				0.02	0.07	0.04
Anticipation				0.01	0.09	0.02
ΔR^2			0.51			0.55

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

HbA1c: Glycated haemoglobin.

Table 3: Means and Standard Deviations of genders in the Ego Defence Mechanisms, Medication Adherence and Self-Management of The Patients with Type 2 Diabetes (N=150).

Variables	Male (n=75) M±SD	Female (n=75) M±SD	t(148)	p	Cohen's d
Mature DM	48±11.52	50.87±11.35	-1.5	0.74	0.25
Suppression	11.37±4.26	11.65±3.70	-0.43	0.2	0.07
Sublimation	12.13±4.05	12.89±3.74	-1.19	0.29	0.19
Humour	10.80±4.29	12.43±4.10	-2.37	0.89	0.39
Anticipation	13.69±4.11	13.89±3.77	-0.31	0.36	0.05
Neurotic DM	35.08±8.32	38.95±8.42	0.56	0.97	0.46
Undoing	5.45±2.37	6.53±2.43	-2.83	0.77	0.45
Pseudo Altruism	6.37±2.90	7.03±2.30	-2.18	0	0.25
Idealization	11.59±4.45	12.28±3.75	-1.8	0.08	0.17
Reaction Formation	11.67±4.18	12.82±4.25	-0.89	0.43	0.27
Immature DM	72.51±14.05	71.29±13.12	-2.75	0.41	0.12
Passive Aggression	4.49±2.71	3.91±2.42	1.4	0.09	0.22
Acting Out	12.77±4.47	11.56±4.58	1.64	0.64	0.26
Isolation	5.41±2.96	5.91±2.37	-1.13	0	0.17
Autistic fantasy	9.72±4.62	10.11±4.94	-0.49	0.26	0.08
Denial	2.78±1.57	2.29±1.56	1.93	0.65	0.31
Splitting	11.45±3.75	10.67±4.11	1.22	0.42	0.2
Rationalisation	13.01±3.82	13.56±3.79	-0.88	0.74	0.14
Somatisation	12.85±4.00	13.29±3.81	-0.69	0.4	0.04
Medication Adherence	4.84±2.34	4.55±2.35	0.77	0.62	0.12
Self-Management	26.15±7.17	26.88(7.80)	-0.6	0.31	0.1

Note: DM: Defense Mechanisms; M: Mean; SD: Standard deviation; CI: Confidence interval; 148 = Degree of Freedom, p = Level of significance, , Cohen's d = the value of effect size.

Also, gender, education, schedule of visit, and timing of insulin were significant negative predictors, while age, physical and psychiatric illnesses were significant positive predictors of adherence to medication (Table-2).

Females were high on neurotic defence mechanism, like pseudo-altruism, compared to the males ($p=0.001$). Also, females used isolation as defence mechanism more than males (Table-3).

Discussion

The findings demonstrated that patients who used mature defence mechanisms, like sublimation and humour, had improved self-management, and patients who used mature defence mechanism, like sublimation, had good adherence to medication. These findings have support of various studies.²³

The gender-based differences noted in the current study are also consistent with the findings of an earlier study.²⁴ However, two other studies support the findings that the females use maladaptive defence mechanisms, like altruism, externalising and related defences, more than men do.^{25,26} Some studies have also illustrated that men have overall low scores on maladaptive defence mechanism.²⁷ The reasons may differ in multiple situations, environmental factors, socialisation, parent-child relationship and other previous experiences.

The current study found no gender difference in medication adherence and self-management of T2DM patients which is consistent with literature.^{24,26}

Conclusion

Individuals using mature defence mechanism had enhanced diabetic management, including physical and medical treatment, to lead a satisfactory life. Healthcare practitioners should consider those defence mechanisms important which cause hindrance in treatment-related behaviours.

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References

1. International Diabetes Federation (IDF). Atlas. 7th ed. Brussels, Belgium: International Diabetes Federation, 2015.
2. Aamir AH, UI-Haq Z, Mahar SA, Qureshi FM, Ahmad I, Jawa A, et al. Diabetes Prevalence Survey of Pakistan (DPS-PAK): prevalence of type 2 diabetes mellitus and prediabetes using HbA1c: a population-based survey from Pakistan. *BMJ Open*. 2019; 9:e025300.
3. American Diabetes Association. Diagnosis and Classification of Diabetes Mellitus. *Diabetes Care*. 2004; 27:5-10.

4. Brenner S. The genetics of *Caenorhabditis elegans*. *Genetics*. 1974; 77:71-94.
5. Vaillant GE. *Ego Mechanisms of Defense: A Guide for Clinicians and Researchers*. Washington, DC: American Psychiatric Press, 1992.
6. Freud S. The Neuro-Psychoses of Defense. *Lancan Online*. 1894; 3:41-61.
7. Jacobson AM, Beardslee W, Hauser ST, Noam GG, Powers SI, Houlihan J, et al. Evaluating ego defense mechanisms using clinical interviews: an empirical study of adolescent diabetic and psychiatric patients. *J Adolesc*. 1986; 9:303-19.
8. Waqas A, Rehman A, Malik A, Muhammad U, Khan S, Mahmood N. Association of Ego Defense Mechanisms with Academic Performance, Anxiety and Depression in Medical Students: A Mixed Methods Study. *Cureus* 2015; 7:337.
9. Levit DB. Gender differences in ego defences in adolescence: Sex roles as one way to understand the differences. *J Pers Soc Psychol*. 1991; 61:992-9.
10. Jin J, Saklar GE, Oh VMS, Li SC. Factor affecting therapeutic compliance: A review from the patient's perspective. *Ther Clin Risk Manag*. 2008; 4:269-86.
11. Gomersall T, Madill A, Summers LKM. A meta-synthesis of the self-management of type 2 diabetes. *Qualitative Health Res*. 2011; 21:853-71.
12. Maes S, Leventhal H, Ridder DTD. Coping with chronic diseases. In: M. Zeidner, NS Endler, eds. *Handbook of Coping: Theory, Research, Applications*. New York: Wiley, 1996; pp-221-52.
13. Lewin SA, Skea ZC, Entwistle V, Zwarenstein M, Dick J. Interventions for providers to promote a patient-centered approach in clinical consultations. *Cochrane Database Syst Rev*. 2001; 12:CD003267.
14. Savoca MR, Miller CK, Quandt SA. Profiles of people with type 2 diabetes mellitus: the extremes of glycaemic control. *Soc Sci Med*. 2004; 58:2655-66.
15. Tanvir S, Ijaz T. Defence Mechanisms in the Patients with Major Depressive and Obsessive Compulsive Disorders; 2014 (Unpublished).
16. Morisky DE, Green LW, Levine DM. Concurrent and predictive validity of a Self-reported measure of medication adherence. *Med Care*. 1986; 24: 67-74.
17. Saleem F, Hassali MA, Shafie AA, Haq N, Morisky DM, Farooq M. Translation and validation study of the Morisky Medication Adherence Scale: The Urdu version. *Int J Person Centered Med*. 2012; 2:384-90.
18. Mapi. Linguistic validation. [Online] [Cited 2018 July 31]. Available from: URL: <https://www.mapi-institute.com/>.
19. Schmitt A, Gahr A, Hermanns N, Kulzer B, Huber J, Haak T. The Diabetes Self-Management Questionnaire (DSMQ): development and evaluation of an instrument to assess diabetes self-care activities associated with glycaemic control. *Health Qual Life Outcomes*. 2013; 11:138.
20. Yousaf M, Akram F. Disease Related Information, Readiness To Change And Self-Management In The Patients With Type 2 Diabetes;2015 (Unpublished).
21. Bowins B. Psychological Defence Mechanisms: A New Perspective. *Am J Psychoanal*. 2004; 64:1-26.
22. Parekh MA, Majeed H, Khan TR, Khan AB, Khalid S, Khwaja NM, et al. Ego defense mechanisms in Pakistani medical students: a cross sectional analysis. *BMC Psychiatry*. 2010; 10:12.
23. Tengblad A, Borgquist L, Grodzinsky E, Lindström K, Mölsted S, Östgren C. Self-monitoring of blood glucose and glycaemic control in type 2 diabetes. *Scand J Prim Health Care*. 2007; 25:140-6.
24. Sundbom LK, Bingefors K. Women and men report different behaviours in, and reasons for medication non-adherence: a nationwide Swedish survey. *Pharm Pract Granada*. 2012; 10:207-21.
25. Vaillant GE. *The wisdom of the ego*. Cambridge: Harvard University Press, 1993.
26. Watson DC, Sinha BK. Gender, age, and cultural differences in the defense style questionnaire-40. *J Clin Psychol*. 1998; 54, 67-75.
27. Munteanu MA. The relationship between psychological types and ego defense mechanisms: A correlational study. *Diss Abs Int Sect: Hum Soc Sci*. 2003; 63:12-A.