Results:

Table 1: General characteristics of the study participants

Variables		Groups		P value
		Zinc	**Placebo**	
Job, %	Unemployed	27.3	4.30	0.02[*]
	Employed	9.1	0.0	
	Other	63.6	95.7	
Education, %	Illiterate	9.1	13.1	0.90[*]
	Elementary	36.4	34.8	
	High School	45.5	47.8	
	University	9.1	4.3	
Marital status, %	Single	22.7	17.4	0.57[*]
	Married	77.3	78.3	
	The Settlement	0.0	4.3	
Age (X±SD) (years)		44.04±7.78	40.69±6.48	0.12[**]
Age of first use (years)		26.25.51±8	22.49±5.36	0.06
Methadone dose used (cc)		18.81±6.71	19.70±7.42	0.72
Duration of methadone use		4.54±2.28	3.90±2.1	0.34

*Chi square test   ** Independent T test

Table 2. The levels of biochemical markers, oxidative stress, depression and anxiety in two groups after 12 weeks of Zink supplementation compared with the intervention group.

Variables	Zink group	Placebo group	P value
Zinc (µg/dL)	85.09±18.24	76.88±15.19	0.03*
Weight (kg)	72.81±13.46	70.6±14.37	0.87
BMI (kg/m^2)	24.06±4.19	24.12±4.65	0.98
TG (mg/dL)	145.68±18.76	141.48±39.58	0.08
Chol (mg/dL)	179.31±18.08	160.17±40.38	0.18
HDL (mg/dL)	50.77±14.22	38.52±12.75	0.04*
LDL (mg/dL)	106.68±29.55	99.65±28.12	0.15
FPG(mg/dL)	81.91±20.18	84.60±14.32	0.13
Insulin(µU/ml)	1.32±0.67	1.78±0.92	0.01*
HOMA-IR	0.28±0.17	0.35±0.19	0.01*
NO(µmol/L)	66.06±2.73	73.57±8.14	0.02*
GSH(µmol/L)	907.08±138.73	856.08±97.54	0.01*
TAC(µmol/L)	920.01±230	1061.22±157.96	0.04*
MDA(µmol/L)	3.84±2.15	3.75±1.50	0.12
Depression	12.01±1.28	13.09±2.44	0.67
Anxiety	12.11±1.50	13.04±1.81	0.07

BMI: Body Mass Index; Chol: Cholesterol; HDL: High Density Lipoprotein; LDL: Low Density Lipoprotein; FPG: Fasting Plasma Glucose; HOMA-IR: Homeostatic Model Assessment for Insulin Resistance; NO: nitric oxide; GSH: Glutathione; TAC: total antioxidant capacity; MDA: malondialdehyde. * P value<0.05

Table 3. The levels of biochemical markers, oxidative stress, depression and anxiety before and after 12 weeks in the intervention group.

Variables	Zink supplementation		P value
	Before	After 12 weeks	
Zinc (μg/dL)	82.81±17.43	85.09±18.24	0.29
Weight (g)	72.9±13.3	72.81±13.46	0.79
BMI (kg/m^2)	24.04±4.18	24.06±4.19	0.87
TG (mg/dL)	170.72±85.82	145.68±18.76	0.04*
Chol (mg/dL)	195.27±31.90	179.31±18.08	0.03*
HDL (mg/dL)	50.81±11.16	50.77±14.22	0.98
LDL (mg/dL)	119.73±19.70	106.68±29.55	0.001*
FPG(mg/dL)	79.91±8.36	81.91±20.18	0.65
Insulin(μU/ml)	2.10±0.47	1.32±0.67	0.001*
HOMA-IR	0.45±0.13	0.28±0.17	0.001*
NO(μmol/L)	60.10±3.74	66.06±2.73	0.001*
GSH(μmol/L)	819.76±114.13	907.08±138.73	0.001*
TAC(μmol/L)	1023.39±131.15	920.01±230	0.06
MDA(μmol/L)	4.09±2.27	3.84±2.15	0.4
Depression	15.03±2.80	12.01±1.28	0.09
Anxiety	17.36±1.46	12.11±1.50	0.001*

BMI: Body Mass Index; Chol: Cholesterol; HDL: High Density Lipoprotein; LDL: Low Density Lipoprotein; FPG: Fasting Plasma Glucose; HOMA-IR: Homeostatic Model Assessment for Insulin Resistance; NO: nitric oxide; GSH: Glutathione; TAC: total antioxidant capacity; MDA: malondialdehyde. * P value<0.05