

Letters to the Editor

The MMPI Profile of Opiate Addicts of Iran: Evidence from Shiraz

To the Editor: There has recently been an explosion of interest in, and research on, the personality of opiate addicts. Individuals with substance use disorders suffer from high rates of non-substance use psychiatric disorders. A survey found axis II disorders in 90% of opiate addicts.¹ Another survey showed that there is a relationship between opiate dependence and some particular personality patterns,² although other studies did not confirm this.^{3,4}

There has not been any previous study on the personality pattern of addicts in Iran. This survey assesses the personality patterns of self-identified addicts of Shiraz, Iran, by the Mini-Mult MMPI-71 (Minnesota Multiphase Personality Inventory), which was developed by Kincannon.⁵ The Mini-Mult MMPI-71 has generated an appreciable amount of research related to its utility with a variety of clinical populations.⁶⁻⁸

Subjects and Methods

Subjects were self-identified opiate (opium, heroin) addicts who had been referred to the Welfare and Health Organization of Shiraz, the capital city of Fars Province in Iran. The diagnosis of opiate use disorder was made by means of semi-structural clinical interview for DSM-IV axis I disorder.⁹ After an explanation of the confidentiality of the data, the patients were visited by a psychiatrist, after which volunteers were accepted for the research. Each subject indicated his response on an individual sheet of paper. The Mini-Mult MMPI-71 is an abbreviated form of the MMPI. This 71-item short form provides conversion tables for deriving raw scores for three validity scales and eight clinical scales (scales MF and SI were omitted). The standard booklet form of the normalized Persian version of the Mini-Mult MMPI-71 was completed by each subject at the first session of admission when subjects were free from drug effects or withdrawal symptoms and score of cognitive function was higher than 25 on the mini-mental status examination.¹⁰ The reading level of the subjects was sixth grade or higher. Predicted raw scores for the three validity and eight clinical scales of the MMPI were obtained from Armentrout's (and Rouzer's) recommendation, who defined technically invalid as either L, F, or K, T scores of above 70.¹¹

Results

The overwhelming majority of subjects was male, and due to the very low number of females (only two from 300), they were omitted from the study. Of the 300 subjects, 140 (46.7%) were eliminated from this study, and

the remaining 160 addicts were used in all subsequent analysis. The resulting typologies produced by application of previous studies^{2,12} were as follows:

Normal group: profiles with no MMPI scale T score over 70.

Primary psychopath: profiles with either a spike 4 (Pd or psychopathic deviation), a 4-9 (Ma or hypomania) or a 9-4 high point code.

Depressed psychopath: profiles with either a 2 (D or depression) or a 4-2 high point code.

Neurotic psychopath: profiles having the two highest points in the neurotic triad (1, Hs or hysteria; 2, D; 3, Hy or hypochondria), with the addition of 7 (Pt or psychasthenia) when it was elevated, with one of these three being disregarded.⁵

Schizoid psychopath: profiles having the two highest points in the psychiatric tetrad (6, Pa; 7, Pt; 8, Sc or schizophrenia; 9, Ma), Pd being disregarded. In agreement with Weisman et al., the following high point codes were also included; 6-1, 1-6, 6-2, 2-6, 8-1, 1-8, 8-2, 2-8.²

Unclassified group: profiles with elevated scale group (e.g., T scores >70) that did not fit into any of the previous categories. The group mean profiles of this sample are characterized by major elevation for D (scale 2) and Hs (scale 1), with a somewhat lesser elevation for Pt (scale 7). The lowest scale is Ma (scale 9). Addicts' sample had a 2-1 group mean profile. Table 1 demonstrates the heterogeneity of this sample by presenting all high point codes.

Discussion

Before discussing the results of this study, some caution should be exercised. The first caution stems from the findings of Haertzen and Hill, who stated that the MMPI profiles produced by addicts are influenced not only by their presenting pathology but also by the stage of drug detoxification or withdrawal.¹² The second caution is that the use of MMPI or any other single personality measure as the sole criterion for treatment or primary prevention is ill-advised. The third caution is that the Mini-Mult MMPI-71 was used, although the loss in reliability and correspondence was not deemed sufficient to mitigate against its use when a standard test could not be obtained.⁵ The fourth caution is that though opiate use is taboo in Iranian culture, it has been used for recreation, pain relief, and the treatment of mental disorders from time immemorial. Although its use is unlawful, the outpatient therapeutic center is not prohibited from prescribing its use for treatment.

In this study, the major elevations were D and Hs, while the third elevation was Pt. But in the West, the two major elevations are Pd and Ma, followed by D. The scale Ma is one of the highest in the West, but in Iranian addicts, it is the lowest scale. Therefore, there are major differences between the mean profile of Iranian addicts and that of the West (Table 2). Another survey in the West also showed

TABLE 1. *Heterogeneity of the sample by all high point codes.*

| Group | N | % |
|----------------------|----|------|
| Normal | 57 | 35.6 |
| Primary psychopath | 2 | 1.3 |
| 49/94 | 0 | |
| spike 4 | 1 | |
| spike 9 | 1 | |
| Depressed psychopath | 24 | 15 |
| 24/42 | 5 | |
| spike 2 | 19 | |
| Neurotic psychopath | 24 | 15 |
| 12/21 | 10 | |
| 13/31 | 5 | |
| 143 | 0 | |
| 27/72 | 8 | |
| 432 | 0 | |
| 472 | 1 | |
| 742 | 0 | |
| Schizoid psychopath | 16 | 10 |
| 18/81 | 1 | |
| 28/82 | 7 | |
| 46/64 | 2 | |
| 48/84 | 2 | |
| 67/76 | 3 | |
| 87 | 1 | |
| Unclassified | 37 | 23.1 |
| 1 | 5 | |
| 3 | 2 | |
| 6 | 7 | |
| 16/61 | 3 | |
| 17 | 1 | |
| 23/32 | 2 | |
| 26/62 | 10 | |
| 34/43 | 1 | |
| 63 | 1 | |
| 68 | 5 | |

TABLE 2. *Frequency distribution of MMPI profile of the opiate addicts.*

| MMPI profile type | Our study (n=160)% | West (n=182)*% |
|-----------------------|--------------------|----------------|
| Normal | 35.5 | 13.1 |
| Primary psychopath | 1.3 | 29.6 |
| Depressive psychopath | 15 | 15.3 |
| Neurotic psychopath | 15 | 9.3 |
| Schizoid psychopath | 10 | 25.2 |
| Unclassified | 23 | 7.1 |

*Weissman et al. study.²

that only a minority of heroin-dependent addicts perform within the normal limits of the MMPI.¹³ This rate was also lower than in our study. The frequency of the normal group in our study was 35.6%, but in the study in the West, it was 13.1%. The frequency distribution of the abnormal group was totally different from the findings of another research in the West. It shows that most of the subjects are in the normal group, in contrast to a previous study (which showed that it was one of the three rare groups). On the other hand, the most common group of the previous study was primary psychopath, but in the Iranian subjects, its frequency was very low and it is the rarest personality group. Therefore, it can be concluded that there are major

differences in personality patterns between the Iranian opiate addict and that of the West.

Researchers have not confirmed the relationship between heroin dependence and any particular personality patterns.^{3,4} We should note that our subjects were self-identified, although they were randomly selected, but there is probably a bias in referring of the subjects. This result may also demonstrate a high prevalence rate of opiate addiction in society because the frequency rate of the normal group is relatively high.

It should be noted that a large number of the respondents were omitted from this study because their profile was technically invalid. Therefore it can be concluded that perhaps personality pattern evaluation of the Iranian opiate addicts by use of an instrument such as the Mini-Mult 71 is not exactly an accurate method.

Although most of the addicts had abnormal personality patterns, the patterns were different from research in the West and, therefore, primary and secondary prevention programs should consider all the personality patterns.

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Intact survival of an infant born at 22 weeks' gestation

To the Editor: With the new advances in the field of neonatal intensive care, survival of extremely premature infants has improved. Here we report an intact survival of an infant born at 22 weeks' gestation who had a stormy hospital course. A male infant, twin B, was born at 530 g by spontaneous vaginal delivery to a gravida 3, para 1, abortion 1 mother. This pregnancy resulted from *in vitro* fertilization due to secondary infertility. Twin A died a few hours after delivery, while our patient was intubated in the delivery room and admitted to the neonatal intensive care unit (NICU). Apgar scores were 3 and 6 at first and fifth minutes, respectively. In the NICU, the infant was ventilated for respiratory distress syndrome that was complicated with pneumothorax. He was given 2 doses of surfactant and 3 doses of indomethacin prophylaxis. He required positive pressure ventilation in the form of conventional and rescue high frequency oscillatory ventilation for a total of 21 days. His hypotension was treated with volume expanders and inotropes (dopamine and dobutamine). The subsequent course was complicated by patent ductus arteriosus that responded to a therapeutic course of indomethacin, retinopathy of prematurity stage III that resolved spontaneously, one episode of *Staphylococcus aureus* and fungal sepsis, grade II-III intraventricular hemorrhage that resolved spontaneously, and chronic lung disease that required inhaled steroids, diuretics and bronchodilators. After having surgery for his inguinal hernia and undescended testis he was discharged home on oxygen at 120 days of age. His weight at discharge was 2080 g. The follow-up at 16 months (11.5 months corrected age) revealed him to be normal in neurological and developmental examinations, utilizing the Bayley Scales of Infant Development (MDI 98).

The survival rate among infants born at 22 weeks' gestation is very low and it ranges between 0 to 12.5%.¹⁻⁴ The intact survival of a 22 weeks' gestation infant is even lower. O'Shea et al.⁵ reported 13 infants born at 22 weeks' gestation and only one infant was free of neurodevelopmental deficit. The problem is that when an infant is born at 22 weeks' gestation, there is no way of knowing in the delivery room whether this infant is likely to be one of those who survives. As a result of this uncertainty in predicting the outcome of extremely low birth weight infants, we recommend active resuscitation in the delivery room and a decision regarding continuing life support to be made subsequently. An ethical committee that includes religious scholars, caregivers, and the family of the infant should make such decisions.

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Antibodies Against *Toxoplasma gondii* in Paired Samples from Pregnant Women and Cord Blood: A Hospital-Based Study

To the Editor: *Toxoplasma gondii* is a protozoan parasite with worldwide prevalence, particularly in warm and moist climates. The parasite is an intracellular organism. Domestic cats are the definitive hosts of the parasite and are the main source of infection via oocysts passed in their feces. Man, livestock and even rodents may act as intermediate hosts for the parasite. Human infection may be acquired by many routes, mainly via contact with infected cats, ingestion of tissue cysts (bradyzoites) in undercooked or raw meat^{1,2} or by blood transfusion.

Intrauterine (congenital) transmission may occur in 25%, 54% and 65% of untreated pregnant women who develop acute toxoplasmosis during the first, second and third trimesters, respectively. Specific maternal therapy in cases detected early reduces the overall incidence of fetal infection by 50%. Fetal involvement is most severe when maternal infection is contracted early in pregnancy.³ This may result in hydrocephalus, intracranial calcification and mental retardation in infants born to infected mothers.

Most of the toxoplasmosis in adult males or females is either asymptomatic or benign. The infection can, however, be severe or fatal in fetuses (as described previously), in patients with acquired immunodeficiency syndrome (AIDS) and in patients receiving cytotoxic therapy. In patients with AIDS and those who are seropositive for *Toxoplasma*, 25%-50% develop cerebral toxoplasmosis.⁴

The prevalence of *Toxoplasma* ranges from 7.5%-95% in different parts of the world. It is estimated to be 7.5% in

Scotland,⁵ 50% in USA,³ 54.0% in Kenya,⁶ 47% in Nigeria,⁷ 37% in Jordan,⁸ and 95.5% in Kuwait.⁹

Few studies have been conducted on the prevalence of subclinical or overt disease in Saudi Arabia. Some work has been conducted on toxoplasmosis in pregnant mothers in Saudi Arabia, notably by Kandil et al.,¹⁰ who recorded a *Toxoplasma* seroprevalence rate of 18% in healthy parous women. Basalamah and Serebour¹¹ conducted a survey of toxoplasmosis in 1000 pregnant mothers in Jeddah. The indirect hemagglutination assay was used for the detection of IgG and the seroprevalence of 1000 first trimester blood samples was 31.2%. Seven of the negative pregnant mothers seroconverted during pregnancy, as shown by a rise in IgG. Abbas et al.¹² examined 3679 Saudi women of child-bearing age from various regions in Saudi Arabia (Jeddah, Riyadh, Dammam, Hofuf, Tabuk, Abha and Al-Baha) for seroprevalence (IgG level) with toxoplasmosis, and recorded an overall prevalence rate of 37.4% (ranging from 22.7% in Hofuf to 51.2% in Abha). A total of 1863 cord samples were screened for IgM and only nine were seropositive. The delivery was normal for the nine babies, and only one baby was of low birth weight and had splenomegaly. Follow-up of six of the infants for 12 months showed normal physical and mental development. In Riyadh, 380 pregnant mothers attending the obstetric and gynecology clinics at King Khalid Hospital were examined for *Toxoplasma* antibodies (IgG).³ The prevalence of toxoplasmosis varied between 25.4% and 36.3% depending on the serological method used (latex agglutination, indirect hemagglutination, enzyme immunoassay and indirect fluorescent antibody). El-Sebai¹⁴ recorded toxoplasmosis in pregnant mothers in the Qassim area (10 of 219 with titers of 1:16) and noted that this may be a cause of repeated abortions in pregnant mothers in the area. El-Hady¹⁵ recorded high (31.6%) seroprevalence (IgG) rate of toxoplasmosis using the indirect hemagglutination test in pregnant mothers in Abha. Ikram¹⁶ recorded toxoplasmosis (IgG level) in pregnant mothers at a seroprevalence rate of 20% in Medina.

The prevalence of *Toxoplasma* IgG and IgM antibodies was examined in 78 premature infants with different clinical pictures in Saudi Arabia. High *Toxoplasma* IgG (46.2%) and IgM (23.1%) antibodies were detected, highlighting the importance of toxoplasmosis as a cause of infant mortality and morbidity.

The present report aims at studying the seroprevalence of toxoplasmosis in pregnant mothers (seroconversion during pregnancy) and in infants born to these mothers.

Materials and Methods

Sera from pregnant mothers (175 samples) were collected in the first, second and third trimesters for IgG levels and from cord blood of infants of these mothers for IgM. A total of 175 sera were examined. Maternal venous blood was collected from a peripheral vein by venipuncture.

Cord blood was collected from a large vein on the fetal side of the placenta immediately after delivery. Serum was stored at -20°C for further analysis by the Microparticle Enzyme Immunoassay (MEIA) for IgG and IgM.¹⁷ Descriptive statistics were used to describe the quantitative variables. Chi-square test, *t*-test and ANOVA were used as appropriate. *P*-values were set to be <0.05 throughout the study. SPSS version 6 and EPI version 6 were used for data analysis.

Results and Discussion

In our study, IMX Toxo IgG assay results of less than 2.94 IU/mL were considered negative for IgG antibody to *T. gondii*. IMX Toxo IgG assay results of greater than or equal to 2.94 IU/mL were considered positive for IgG antibody to *T. gondii*, possibly indicating past inactive infection. Sera from subjects who were positive for IgG were tested for IgM using the same technique: IMX Toxo IgM (MEIA for IgM). IMX Toxo IgM assay indexes of less than 0.500 are negative for IgM antibody to *T. gondii*. IMX Toxo IgM assay indexes of greater than or equal to 0.500 are considered positive for IgM antibody to *T. gondii* and indicate acute active infection.

Of a total of 175 pregnant mothers, 69 (39.4%) recorded seroprevalence values of IgG ranging from 5.6-300 IU/mL, indicating inactive toxoplasmosis. Only one case (0.56%) seroconverted from negative to positive during pregnancy. The infant born to this mother was recorded with positive toxoplasmosis (value of 0.5 for IgM). This infant had no abnormalities. The IgM values of the other cord blood samples were negative. The delivery of pregnant mothers was normal in all 175 mothers; fetal weight varied from 2.5-3.9 kg, with a mean of 2.8 ± 1.0 .

The seroprevalence (39.4%) recorded for inactive toxoplasmosis in pregnant mothers in this study is comparable to that recorded in the Dammam area (42.1%) and higher than that of the Hofuf area (22.7%).¹²

Many other investigators have recorded similar values in other areas in the Kingdom.¹⁴⁻¹⁶ This seroprevalence in pregnant mothers in the present study is in accordance with the general seroprevalence in the epidemiological survey in the Eastern Region. However, a very low level (0.56%) of seroconversion (active toxoplasmosis) and congenital transmission occurred in this study, similar to the rate (1 of 152) recorded by Basalamah and Serebour¹¹ in the Jeddah area and the total (9 of 1863) recorded in the whole of Saudi Arabia.

The pregnancy of the toxoplasma IgM-positive mother was uneventful. There was no stillbirth or premature labor. In addition, no congenital abnormalities were detected in the baby who was born to a *Toxoplasma* IgM-positive mother.

The absence of congenital anomalies at birth does not necessarily mean that this particular child will not suffer future consequences of intrauterine exposure to *T. gondii*.

Ocular defects may develop later on in childhood. This child shall be followed for the possibility of such abnormalities.

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