

Minnesota Multiphasic Personality Inventory (MMPI) in Third Trimester of Physiologic Pregnancy

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Abstract

MMPI was presented to 848 pregnant women for the purpose of analysing their psychological characteristics and to identify those with derangements of uterine activity combined with other labor complications. All women were divided into groups according to the obstetric past history, parity, mode of delivery and length of the first and second stage of labor. Statistically significant differences in the MMPI scales were found only in the groups arranged according to the criterion "past history". The group of women having a legal interruption of pregnancy (LIP) in their past history ($n = 178$) had higher scores in the scales of psychopathy, paranoia, psychasthenia, schizoidity and hypomania and a lower score in the scale of anxiety.

Zusammenfassung

Der MMPI wurde mit 848 schwangeren Frauen durchgeführt, um ihre psychologischen Charakteristika und Zusammenhänge mit Schwierigkeiten bei der Geburt zu erfassen. Die Frauen wurden in Gruppen eingeteilt, und zwar nach den Kriterien „Besonderheiten in der Vorgeschichte“, „Zahl der Schwangerschaften“, „Entbindungsart“ und „Zeitdauer der Entbindung“. Statistisch signifikante Unterschiede in den MMPI-Skalen fanden sich nur in der Gruppe „Besonderheiten in der Vorgeschichte“. Die Gruppe der Frauen, die eine legale Schwangerschaftsunterbrechung in ihrer Anamnese hatte ($n = 178$) hatten höhere Werte in den Skalen Psychopathie, Paranoia, Psychasthenie, Schizoidie und Hypomanie und geringere Werte in der Angstskala.

Introduction

In the last years several systems have been developed the aims of which were to find out who would deliver normally and who would be at risk¹⁻⁶. In spite of some interesting results of these papers, the problem of prediction of obstetric complications by means of psychologic methods has so far not been reliably solved.

In this study we wanted to find out first, whether it is possible to screen by means of MMPI the group of women having a greater occurrence of derangements of uterine activity or other obstetric complications and second, the MMPI was used as a screening test for the psychopathological features of pregnant women.

Method

MMPI in the Saarbrücken Form together with complementary scales for anxiety and alexithymia was presented to 848 women being in the 32nd – 34th weeks of pregnancy. All pregnancies were physiological and all fetuses were in vertex presentation. The group was divided according to the following criterias:

- a) parity:
 - 1 – primiparae (n = 506)
 - 2 – secundiparae (n = 277)
 - 3 – terciiparae (n = 51)
 - 4 – multiparae (n = 14)
- b) past history:
 - 1 – primigravidae (n = 354)
 - 2 – without legal interruption of pregnancy (LIP) and without miscarriage (n = 195)
 - 3 – LIP (n = 178)
 - 4 – miscarriage (n = 95)
 - 5 – LIP plus miscarriage (n = 26)
- c) mode of delivery:
 - 1 – spontaneous (n = 742)
 - 2 – forceps delivery (n = 26)
 - 3 – caesarean section (n = 80)
- d) length of the first stage of labor:
 - 1 – shorter than 190 min. (20th percentile) (n = 176)
 - 2 – longer than 190 and shorter than 440 min. (n = 595)
 - 3 – longer than 440 min. (80th percentile) (n = 177)
- e) length of the second stage of labor:
 - 1 – no longer than 5 min. (20th percentile) (n = 220)
 - 2 – longer than 5 and shorter than 20 min. (n = 420)
 - 3 – longer than 20 min. (80th percentile) (n = 208)

For the compilation of data the programme STATGRAPHICS, version 2.1 was used.

Results

The group profiles (Table 1–5) of all group are within the norm. Most interesting are the results in the group b3 (Table 2), i.e. in women with a LIP in personal history. They attain significantly higher values in the scales L (as compared to b2 and b4), F (b2), Pd (b2, b4), Pa (b1), Pt (b1), Sc (b1, b4), Ma (b2), Ax (anxiety) (b2, b4). The women with a prolonged first or second stage of labor, with a forceps delivery or caesarean section do not exhibit significant differences in the MMPI scores.

Table 1. Parity and MMPI

MMPI	parity			
	primi-	secundi-	terci-	multi-
L	4.30	4.56	4.46	4.92
F	5.67	5.49	5.05	7.50
K	14.47	14.51	14.50	14.14
Hs	7.25	7.18	7.13	9.64
D	17.86	17.74	17.92	18.57
Hy	20.96	21.07	21.05	21.78
Pd	16.11	15.68	16.01	17.07
Mf	33.24	32.84	33.31	32.45
Pa	10.51	10.81	11.03	10.50
Pt	13.00	12.90	12.94	15.35
Sc	12.42	12.65	11.92	14.78
Ma	15.80	15.11	15.00	17.42
Si	28.82	29.58	29.45	30.64
Ax ¹	11.42	11.57	11.29	10.64
At ²	17.52	17.87	18.11	19.42

¹ alexithymia

² anxiety

Discussion

It be apparent that the MMPI was not quite successful in the prediction of labor complication in the form of prolonged first or second stage or labor, of forceps delivery or of caesarean section. Not even Taylor’s anxiety scale which has been repeatedly connected with obstetric complication in the literature^{1,4,5}, demonstrated statistically significant differences between the groups. As far as the protracted second stage of labor and the forceps delivery is concerned, the results lie in the assumed direction. The differences may be caused by both the differently defined criteria for obstetric complications and the size of the studied series as well as the time of the measurements.

The Osborne Finding⁷ concerning a higher occurrence of hypomania and hysteria in primiparae has not been confirmed unambiguously, even though the result, in case of hypomania, lies in the assumed direction.

Table 2. Past history and MMPI

MMPI	past history ³				
	1	2	3	4	5
L	4.35	4.74	3.97	4.85	4.23**
F	5.54	5.18	6.17	5.40	6.57*
K	14.68	14.61	14.00	14.27	14.96
Hs	6.98	7.34	7.79	7.23	6.80
D	17.69	17.40	18.56	17.86	18.23
Hy	20.80	21.27	21.39	20.97	20.50
Pd	15.87	15.44	17.33	14.89	16.46***
Mf	33.05	33.31	33.15	32.92	32.57
Pa	10.37	10.57	11.34	10.54	10.46*
Pt	12.72	12.58	14.35	12.26	13.57*
Sc	12.18	12.17	13.94	11.30	14.23**
Ma	15.60	14.89	16.34	15.11	16.30*
Si	28.90	29.96	28.87	29.68	25.80
Ax ¹	11.52	11.77	11.00	11.94	9.23***
At ²	17.21	17.58	19.05	17.40	16.84

¹ alexithymia² anxiety³ 1 – primigravidae, 2 – without LIP and without miscarriage,

3 – LIP, 4 – miscarriage, 5 – LIP plus carriage

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **Table 3.** Mode of delivery and MMPI

MMPI	mode of delivery		
	spont.	foreceps	s.c.
L	4.39	4.41	4.58
F	5.57	5.80	5.93
K	14.48	15.23	14.21
Hs	7.17	7.34	8.02
D	17.73	17.76	18.92
Hy	20.96	21.15	21.73
Pd	15.94	16.19	16.26
Mf	33.09	32.31	33.56
Pa	10.64	10.46	10.75
Pt	12.93	12.15	14.06
Sc	12.42	12.26	13.46
Ma	15.53	16.53	15.47
Si	29.17	28.65	28.96
Ax ¹	11.48	11.80	10.97
At ²	17.61	17.15	18.73

¹ alexithymia² anxiety

Table 4. Length of the first stage of labor and MMPI

MMPI	length of the first stage of labor		
	≤ 190 min.	190–440 min.	≥ 440 min.
L	4.38	4.39	4.36
F	5.34	5.59	5.67
K	14.39	14.61	14.31
Hs	7.34	6.91	7.62
D	17.68	17.59	18.15
Hy	21.02	21.00	20.77
Pd	16.14	15.93	15.73
Mf	33.55	32.90	33.15
Pa	10.96	10.52	10.54
Pt	13.48	12.66	12.88
Sc	12.12	12.33	12.70
Ma	15.05	15.57	15.75
Si	30.05	28.72	29.49
Ax ¹	11.45	11.53	11.42
At ²	18.32	17.26	17.61

¹ alexithymia² anxiety**Table 5.** Length of the second stage of labor and MMPI

MMPI	length of the second stage of labor		
	≤ 5 min.	5–20 min.	≥ 20 min.
L	4.33	4.46	4.27
F	5.31	5.63	5.75
K	14.32	14.50	14.63
Hs	7.25	7.19	7.05
D	17.69	17.84	17.62
Hy	20.85	21.03	20.94
Pd	15.81	15.88	16.23
Mf	32.76	33.32	32.85
Pa	10.67	10.68	10.53
Pt	12.93	13.16	12.43
Sc	12.04	12.69	12.22
Ma	15.66	15.47	15.59
Si	28.95	29.55	28.61
Ax ¹	11.44	11.44	11.68
At ²	18.02	17.72	16.92

¹ alexithymia² anxiety

The interesting results in the group of women having LIP in past history provoke questions as to whether the increased MMPI score found in pregnancy is only a consequence of LIP, or, whether, notwithstanding the pregnancy, there is a specific type of women that tend to have pregnancy interruptions.

It is necessary to add that the group average of all studied groups did not surpass, in any of the MMPI scales, the value of one standard deviation from the norm. Consequently, no tendency towards psychopathology measurable by MMPI was found in pregnant women. In this connection it is necessary to take into account Harrison's objection⁸ that the MMPI was developed without respect for criteria of internal consistency and that the items can be combined in the scales in such a way that they interfere with their discriminative effect and produce nondiscriminative scales.

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