

## LEARNING WITH THE AMERINDIANS: STRENGTH OF THE PELVIC FLOOR MUSCLE AND PREVALENCE OF ORGAN PELVIC PROLAPSE AMONG INDIGENOUS WOMEN WHO LIVES IN THE XINGU INDIGENOUS PARK, MT, BRAZIL.

### Hypothesis / aims of study

The Xingu Indigenous Park is located at the State of Mato Grosso, in the southern part of the Brazilian Amazon. Characteristics of women living in this community differ very much from those of women in the developed countries as the marriage at an earlier age, high fertility rates and the squatting position during the labor and delivery. Our purpose was to study the pelvic floor muscle strength, prevalence of genital prolapse and possible related factors among female indigenous who lives in the Xingu Indigenous Park.

### Study design, materials and methods

377 indigenous women of 50 villages across Xingu River were evaluated. Mean age was 30, 1 ± 2 years (range 13 to 80 years), mean body mass index was 20, 4 ± 12 Kg/m<sup>2</sup> (range 15, 7 to 32 Kg/m<sup>2</sup>), mean parity was 6 ± 3 (range 0 to 16) and 90, 2% of deliveries were at the squatting position. All women underwent the pelvic floor prolapse quantification system examination (POP-Q) in dorsal lithotomy position, during maximal Valsalva. Pelvic floor muscle strength was assessed by a portable perineometer (Peritron 9300®). The demographic variables, fertility, and the pelvic strength were entered into a logistic regression model to determine risk factors for prolapse (defined according to the point Ba≥0). The data were analysed by use the SPSS-PC package and p<0, 05 was considered statistically significant.

### Results

The mean values for each of the pelvic organ prolapse staging system points are show in table 1. The mean values of the genital hiatus, perineal body, and total vaginal length were 3, 4, 2, 1 and 7,3 cm respectively. The overall distribution of POP-Q system stages were distributed as follows: 22% stage 0; 22% stage I; 24% stage II and 12% stage III. None of the indigenous women had prolapse stage IV. The mean of the resting pressure of pelvic floor muscle was 29,9±14,4 cmH<sub>2</sub>O (range 1 to 89 cmH<sub>2</sub>O) and the mean of maximal pressure was 46,3±21,2 cmH<sub>2</sub>O (range 2 to 130 cmH<sub>2</sub>O). Resting pressure and maximal pressure were not correlated with the POP-Q stages (figure 1). Multivariate logistic regression analysis revealed vaginal delivery to be the stronger risk factor for pelvic organ prolapse (table 3). Highly parous women had nine times the odds of prolapse compared with nulliparous women (p<0,01). The high resting pressure was considered a protector factor (OR=0,96; 95% CI 0,94-0,98; p=0,02).

Table 1- Mean POP-Q values.

Result	Mean ± SD (range)
Aa	-1,2 ± 1,1 (-3 to 3)
Ba	-1,2 ± 1,1 (-3 to 4)
C	-5,0 ± 1,3 (-9 to 6)
GH	3,4 ± 0,9 (1 to 6)
PB	2,1 ± 0,7 (1 to 5)
TVL	7,3 ± 1,2 (4 to 11)
Ap	-2,0 ± 0,8 (-3 to 3)
Bp	-2,0 ± 0,9 (-3 to 3)
D	-6,4 ± 1,6 (-9 to 10)

Figure 1 – Resting pressure and maximal pressure of pelvic floor muscle according POP-Q stages.

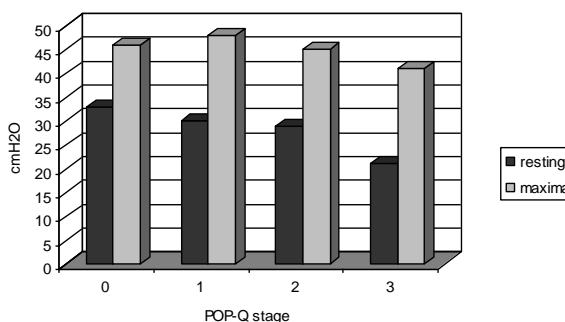


Table 2: Risk factors for pelvic organ prolapse (point Ba≥0) in 377 indigenous women who lives in Xingu Indigenous Park, MT, Brazil.

Risk factor	IC (95%)	OR	IC (95%)	Adjusted OR
Vaginal delivery	3.72-39.33	12.10 (<0.0001)	2.81-31,42	9.40 (<0.0001)
Age	1,01-1,05	1,03 (p<0,001)	NR	NR
BMI >25	0.99-2.71	1.64 (p=0.054)	0.79-2.24	1,33 (p=0.29)
Resting pressure	0.95-0.98	0.96 (p<0.0001)	0.94-0.98	0.96 (p<0.0001)
Maximal pressure	0.97-1.02	0.99 (p=0,46)	0.97-1.02	0.99(p=0,46)

### Interpretation of results

We observed that high parity is the single most important risk factor for prolapse in indigenous women, as well as it has been demonstrated in several populational studies with non-indigenous women [1]. Although the number of deliveries was highly among Xingu indigenous women, severe pelvic organ prolapse was less frequent than we had expected [2]. Pelvic floor muscle strength in this group was higher than the most of the studies in the literature, maybe due to the indigenous lifestyle, as the habit of the position of squatting [3]. However, future studies are necessary to compare the prevalence and etiology of genital prolapse in indigenous and non-indigenous women.

### Concluding message

This is the first community-based study of prolapse in Amerindians. Parity was confirmed to be the strongest risk factor for prolapse; however the pelvic floor muscles strength were intact, maybe due to the indigenous lifestyle.

## References

1. Am j Obstet Gynecol.2000; 183:277-85.
2. BJOG.2002; 109:431-6.
3. Int J Gynecol Obstet. 2005; 88(3):276-80.

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<b><i>Is this a clinical trial?</i></b>	<b>No</b>
<b><i>What were the subjects in the study?</i></b>	<b>HUMAN</b>
<b><i>Was this study approved by an ethics committee?</i></b>	<b>Yes</b>
<b><i>Specify Name of Ethics Committee</i></b>	<b>Ethical committee UNIFESP</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>Yes</b>