

# SIESTAS AMONG BRAZILIAN NATIVE TERENA ADULTS

## A STUDY OF DAYTIME NAPPING

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**ABSTRACT** - Regular daytime napping behavior, also known as siesta culture, is influenced by circadian, cultural and environmental factors. This research analyzes characteristics of regular daytime napping in Brazilian Native Terenas. We evaluated 65 adults ( 32 M; 33 F ) from 18 to 75 years, with a mean age of 37.2, from the Indian Reservation village Córrego do Meio, in the central region of Mato Grosso do Sul. Daytime napping characteristics were evaluated by means of a standard questionnaire applied to each individual. It was observed that weekly daytime napping (at least once a week) was present in 72.3% of the population. There was a tendency to occur in males. The effects of weekends was mild. Mean onset time of daytime sleep was 12.2 h, remarkably earlier than usually described in urban populations. This data stresses the need to consider ethnic influences in order to understand sleep habits.

**KEY WORDS:** siesta, napping, daytime nap, sleep, sleep habits, Native, Indian, Terena, Mato Grosso do Sul.

### **Sono diurno em indígenas terena: um estudo da sesta**

**RESUMO** - O comportamento de dormir regularmente durante o dia, denominado cultura de sesta, é influenciado por fatores circadianos, culturais e ambientais. Esta pesquisa buscou verificar as características do sono diurno regular em indígenas Terena. Avaliamos 65 adultos (32 M; 33 F) de 18 a 75 anos de idade (média 37,2 anos) da aldeia Córrego do Meio, situada em reserva indígena na região central de Mato Grosso do Sul. As características do sono diurno foram avaliadas por meio de questionário padronizado. Como resultado, verificamos que 72,3% dos indivíduos apresentavam sesta, pelo menos uma vez por semana. Este hábito tendeu a ser mais encontrado no sexo masculino. Apenas 9,2% referiram sesta só nos fins de semana. O horário de sesta foi acentuadamente mais cedo do que o descrito em populações urbanas, iniciando a sesta em média às 12,2 h. É necessário ponderar as influências étnicas para compreender as características do dormir.

**PALAVRAS-CHAVE:** sesta, cochilo, sono diurno, sono, hábito de dormir, nativo, índio, Terena, Mato Grosso do Sul.

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The habit of sleeping during daytime is well recognized as part of the human adult sleep-wake cycle. However, this tendency is not always expressed as daytime napping behavior<sup>1-3</sup>. The regular daytime nap is found in several populations around the world, and is sometimes called the siesta culture. It is subject to circadian, cultural and environmental factors<sup>4-13</sup>.

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This research is part of a larger project that we have been systematically conducting to describe and understand the ethnic influences on sleep, with emphasis on the Native Brazilian<sup>14-17</sup>. The present study characterizes Terena adult daytime napping. Literature focusing on Native Brazilian daytime napping is unknown to us.

## METHOD

The Brazilian Native Terena belongs to the Aruak-speaking Native branch<sup>18,19</sup>. The group in this study are agriculturally oriented, peaceful and well-adapted to the fertile lands and tropical climate of the central region of Mato Grosso do Sul.

We studied the Córrego do Meio (CM) village, in the municipality of Sidrolândia, Mato Grosso do Sul. CM is located on an Indian Reservation; 40 km from the nearest town, Sidrolândia.

The interviews were conducted from house to house, encompassing all homes in this age range.

Sixty five Native Terena adults with ages (Table 1) ranging from 18 to 75 years (mean age 37.2 years) were evaluated (32 M; 33 F). Mean age of males was 35.7 years, ranging from 18 to 75 years. Mean age of females was 38.6 years, ranging from 18 to 66 years. Sleep characteristics were investigated through interviews during the summer of January 1999. Interviews were conducted personally by the authors. Three male adults were excluded because they worked out of the Indian Reservation, on an irregular sleep-wake schedule. Terena adults do not wear watches but some have them in their homes.

Five yes/no multiple choice questions focusing primarily on the habit of daytime napping were employed to evaluate the siesta habit<sup>20</sup>. This is part of a larger sleep questionnaire data set that will be presented elsewhere.

## RESULTS

In the entire sample of 65 adults, 72.3% referred to weekly daytime napping (at least once a week). Among those indulging daytime napping, 59.5% were males and 40.4% were females. In the 20-30 year old group 87.5% presented daytime napping; while in the older group of 60 or more, 71.4% napped during the day.

In the group of those who nap during the day (Fig 1), only 7.6% males and 5.1% females napped a mean of one day per week ; while 35.9% males and 20.5% females napped seven days per week. There was a tendency of males to sleep more days per week, among those who sleep seven days per week 63.6% are males.

*Table 1. Distribution of Terena adults evaluated, according to age and sex in Córrego do Meio village.*

Age (years)	M	F	Total
18-19	4	3	7
20-29	9	7	16
30-39	5	11	16
40-49	7	8	15
50-59	2	2	4
60-69	3	2	5
70-79	2		2
Total	32	33	65

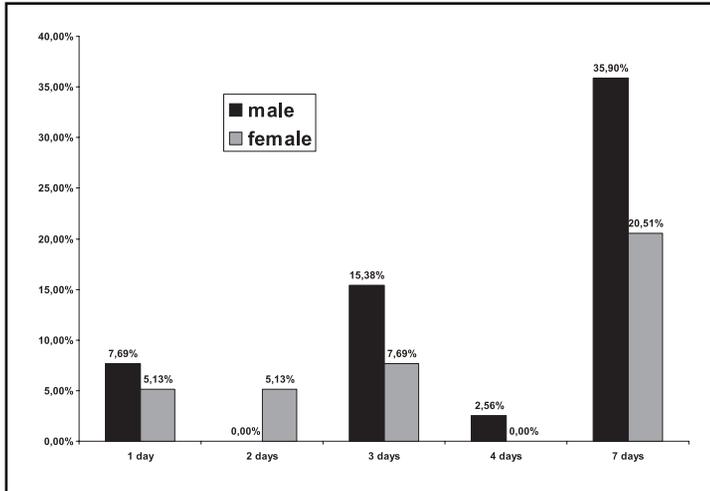


Fig 1. Frequency of daytime nap in Terena adults in Córrego do Meio village.

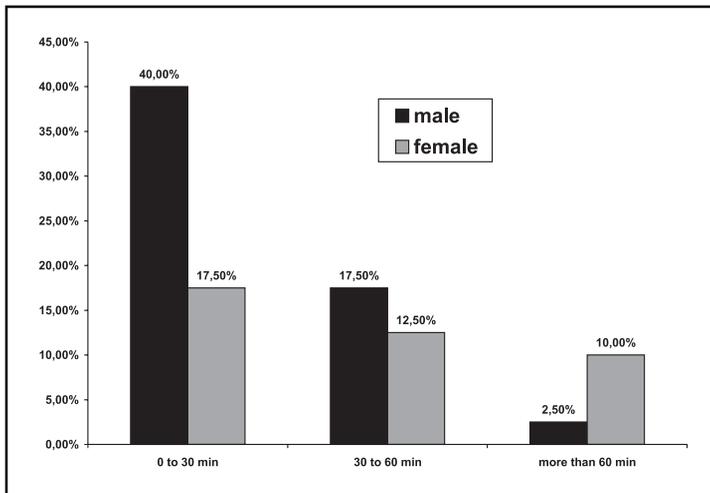


Fig 2. Duration of daytime nap in Terena adults in Córrego do Meio village.

Regarding duration of the daytime nap (Fig 2), most napped 0-30min; and in only 2.5% males and 10.0% females it lasted more than 60 min. There was a tendency for males to have shorter daytime naps. Among those who had 0-30 min naps, 69.5% were males; among those who had longer than 60 min naps only 20% were males.

When asked if they napped during day only on weekends, out of a total of 65 individuals, only 9.2% answered affirmatively (3 males, 3 females). Five of these 6 who napped only on weekends during the day, were in the 30-50 age bracket.

The mean onset of daytime napping was 12.2 h. The male mean was 12.1 h and the female mean was 12.5 h. None stated starting to nap after 13.0 h (Fig 3). In regard to age, the mean daytime nap onset was 12.1 h for 20-30 year old; the mean was 12.2 h for those 60 or more.

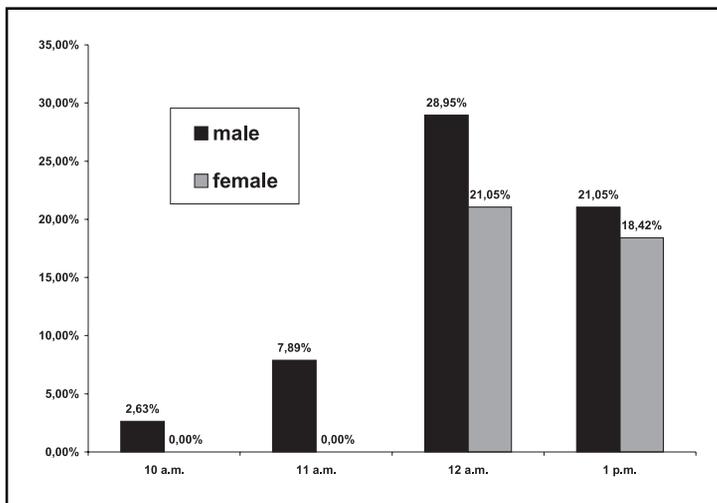


Fig 3. Onset of daytime nap in Terena adults in Córrego do Meio village.

## DISCUSSION

The finding in this study of 72.3% of the Terena group having daytime naps weekly characterizes it as a siesta culture. Several authors have shown that even in populations traditionally considered as siesta cultures such as Italy and Greece, not everyone sleeps everyday<sup>5,8-10</sup>. In Sao Paulo city<sup>20</sup>, 25.4% nap during the day. In a traditional population in Mexico, 79% napped weekly (at least once a week)<sup>9</sup>. In young adult populations weekly napping was found in 76% in a US group<sup>4</sup>; in 52% in a Guatemalan group<sup>4</sup>; in 80% in a Nigerian group<sup>6</sup>. In a US population 50-60 year olds, 55% napped weekly<sup>11,12</sup>.

Social-cultural factors influence the regular daytime nap. The repression of the siesta habit has been described in populations that suffer time pressure when undergoing industrialization<sup>21</sup>. This reduction of siesta in urban developing populations has been shown to occur in groups previously considered as siesta cultures, i.e., Greece, Italy and Mexico<sup>8,9,10,22</sup>. In Greece, Soldatos et al.<sup>8</sup> found 47% of the population showed weekly napping; in Italy, Lugaesi et al.<sup>5</sup> found 36% napping weekly. Among the Terena who nap during the day, 35.9% males and 20.5% females nap 7 days per week. The mean naps per week was 3.0 in a US population studied by Webb and Aber<sup>12</sup>.

Several authors have shown that the habit of regular daytime naps increases with age. This same result has been seen in a group of healthy elderly adults<sup>23</sup> compared to young adults; and in the general population of Sao Paulo city<sup>20</sup>. Webb and Aber<sup>12</sup> found that in senior citizens ( mean age 63 years ), 65% present weekly napping. In the Terena group here studied we did not notice a tendency to increase nap frequency in the aged compared to young adults.

The results were similar in different populational studies, showing a greater number of males who nap regularly during the day compared to females<sup>24</sup>. This was described in young adults in Canada<sup>25</sup>; in the general middle aged population in Japan<sup>26</sup>; in a large sample of middle aged and senior citizens in US<sup>27</sup>; and in a large sample of healthy elderly adults in Iceland<sup>24</sup>. In the general population of Sao Paulo<sup>20</sup> regular daytime napping was also more often present in males (29.0%) than females (22.5%). Our findings of a trend in this Terena group to present more daytime naps in males than females confirms the same consistent tendency generally described in these other populations<sup>20,24-27</sup>.

In regard to daytime and weekend napping, in our Terena group only a small number (9.2%) reported that they napped during the day only on weekends. This displays the mild importance of distinguishing week-days from weekends for this Terena group, and the need to account for the social-cultural factors to understand the regularity of daytime napping. We suppose the Terena pattern reflects the regular agricultural chores and the moderate value attributed to the western urban culture concept of weekend. In a study with the São Paulo urban population, there were more people that have daytime naps during weekends than on week-days; and their duration was longer on the weekends (1.7 h) than during week-days (1.2 h<sup>20</sup>).

In the Terena group here focused the mean onset of daytime napping was remarkably earlier than described in urban populations<sup>20</sup>. The nocturnal sleep pattern of this Terena population will be described elsewhere but we should mention that the mean sleeping time at night in this group was also remarkably earlier (20.6 h) than observed in urban populations (23.5 h<sup>20</sup>). Mean morning wake up time in the Terena was also remarkably earlier (6.1 h) than observed in urban populations (7.4 h<sup>20</sup>). This phase advance of siesta time observed in the Terena compared to urban populations supports the concept that describes napping as the expression of a semi-circadian (12-hour) sleeping rhythm<sup>1,2,28-30</sup>.

In the Terena population the duration of the daytime nap was predominantly 0-30 min. Daytime nap duration tended to be predominantly shorter in males. In the Sao Paulo urban population<sup>20</sup> the mean nap duration was 1.2h in week-days and 1.7h in weekends. The mean daytime nap lasted 1.3h<sup>9</sup> in a Mexican population; 1.2h<sup>4</sup> in a Guatemalan population; 1.2h<sup>4</sup> in a US population; 1.5h<sup>6</sup> in a Nigerian population; 1.3h<sup>8</sup> in a Greek population. In the 50-60 year age bracket, in the US, the mean duration was 1.1h<sup>11,12</sup>.

Among the social-cultural factors that account for regular daytime nap patterns or siesta cultures, are an agricultural society, and a tropical climate<sup>13</sup>. The Terena group here focused are bound to agriculture and live in a tropical climate.

Our previous studies<sup>14,15,17</sup> have shown that Native Brazilian Terena sleep patterns differ markedly from the urban western culture pattern. The Terena more often present the habit of cosleeping (bed sharing) with family members, with numerous persons and beds in the same bedroom. Their bedroom is silent and with adequate temperature for sleeping; and minimal influence of TV or radio. The bedroom settings are described as adequate for sleeping in more than 90.0% of the homes<sup>15,17</sup>. In the present report, we found that regular daytime napping is a widely used pattern in this Terena group, larger than most western culture urban populations. We emphasize the need to account for the ethnic influences in order to understand sleep habits

## CONCLUSION

The present report showed the presence of regular daytime napping at least once a week in 72.3% of the Brazilian Native Terena adults studied in the CM village, characterizing a siesta culture. The onset of daytime napping in this Terena group was remarkably earlier than described in urban populations. The Terena also showed a pattern of earlier nocturnal sleep onset and earlier morning wake-up time than described in urban populations. In the Terena group daytime napping was not remarkably related to weekends. The daytime napping tended to be more often found in males. Daytime napping, is regarded as a behavior consequent to the semi-circadian sleep-wake cycle but it is remarkably influenced by social-cultural factors.

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