

The role of migration for the schistosomiasis occurrence in the south /southwestern of Minas Gerais state, Brazil

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Schistosomiasis is a public health problem in Minas Gerais (MG), Brazil, where it is endemic in the central, north and northeast regions of the state. The South/Southwest region of MG, made up of small towns, is considered not endemic. However, some features may facilitate the establishment of disease transmission foci taking into account the following factors: large drainage network, the presence of snails of the genus *Biomphalaria*, and constant migration flows of workers recruited for regional agricultural crops. The aim of this study is to present an epidemiological analysis of schistosomiasis in two municipalities, Guaranesia and Arceburgo, located in the southwestern of the MG state. For this, stool samples collected from migrants, at two different moments, were subjected to parasitological exams, and the data related to schistosomiasis occurrence were compared. In Guaranesia, an inquiry on 423 migrants, carried out in 2009, showed a positivity rate for schistosomiasis of 5.0% (21/423). Among the migrants recruited for working in Guaranesia in 2009, 193 were coming from Paraíba state, 17 from others states of the country and 213 from different regions of MG, all the schistosomiasis cases being detected in this last group of migrants. Among the 66 migrants recruited in 2015, proceeding from municipalities of 12 different states, eight (12.1%) were diagnosed as infected with *S. mansoni*, seven coming from Pernambuco and one from Bahia. In Arceburgo, no cases of schistosomiasis were detected in the inquiries carried out with 184 and 34 migrants, respectively in 2012 and 2015. The epidemiological investigation showed that almost all of migrants recruited for working in Arceburgo were proceeding from municipalities of Paraíba, located in the hinterland region of the state, not endemic for schistosomiasis. In 2015, a parasitological survey was also conducted involving 147 schoolchildren, 99 in Guaranesia and 48 in Arceburgo. Except for the only schoolchild diagnosed as *S. mansoni* positive in Guaranesia, who was determined as coming from a schistosomiasis endemic municipality of Pernambuco state, Timbauba, no cases of schistosomiasis were detected among the schoolchildren of the two municipalities. Ten family members of the only positive schoolchild were submitted to parasitological examination and seven were positive for *S. mansoni*. The number of eggs per gram of feces (by Kato-Katz) ranged from 12 to 222 among migrants, and from 40 to 387, among the relatives of the scholar. This data may suggest that schistosomiasis in this area continues to be restricted on migrants, coming from different endemic regions. The results suggest differences in the risk of exposure to *S. mansoni* and the importance of epidemiological surveillance, even in non-endemic areas, with a focus on migrants, when they come from endemic regions for schistosomiasis.

Keywords: *Schistosoma mansoni*; epidemiological surveillance; migrants.

FIGURA E TABELAS PARA CONFECÇÃO DO POSTER

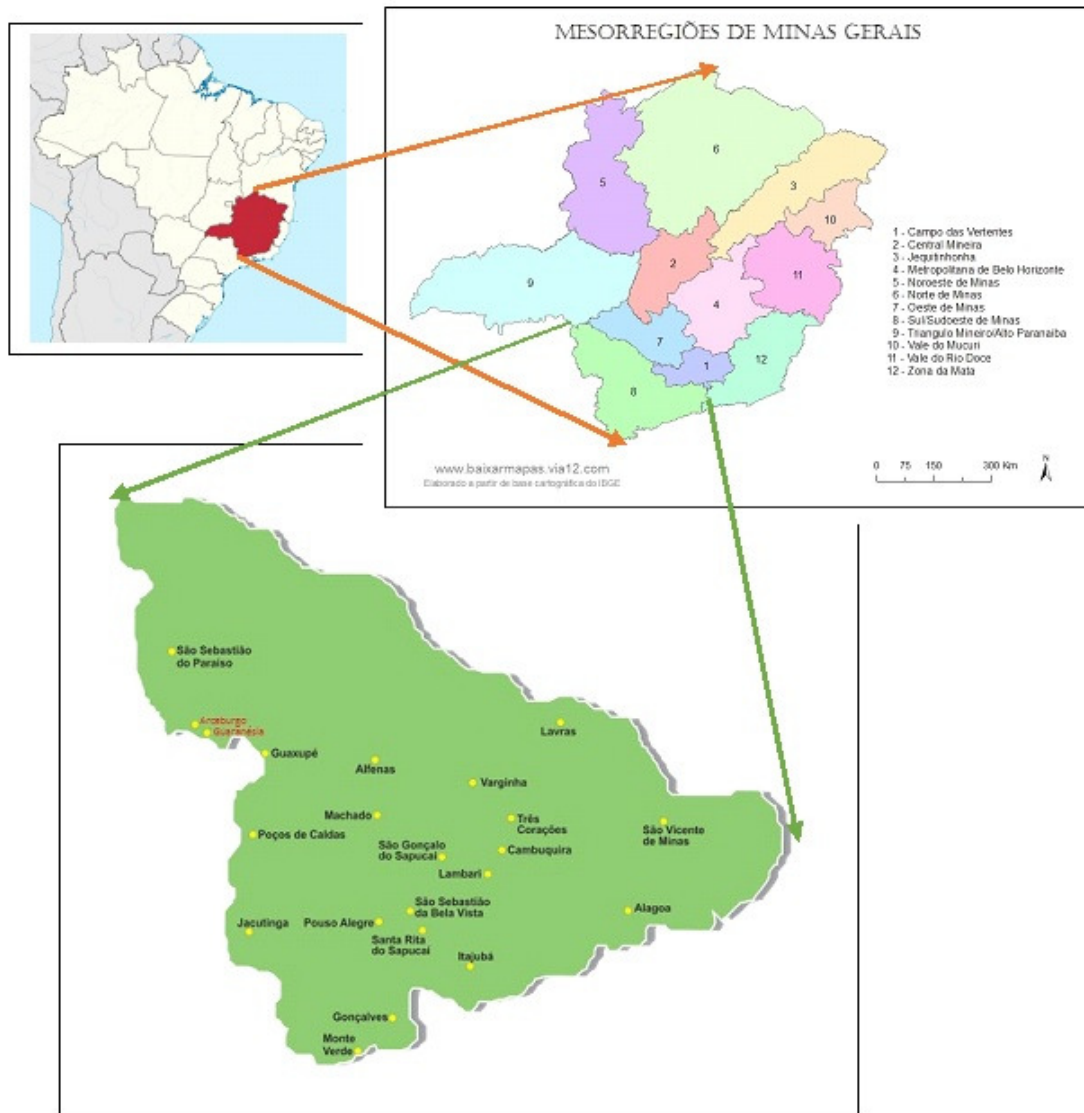


Figure
Localization of the municipalities of Arceburgo and Guaraniésia, within the south / southwest region of the Minas Gerais state.

Table 1

Total number of processed samples, *S. mansoni* positive samples (P), and positivity rates (%), among the migrants, according to the year of the study, state of origin, and to the municipality where the samples were collected.

MUNICIPALITY	Guaranésia				Arceburgo	
	2009		2015		2012	
State of origin	Total	P	Total	P	Total	P
MG	213	21 (9,9%)	6	0	0	0
AL	1	0	1	0	0	0
BA	3	0	3	1	0	0
CE	1	0	7	0	0	0
MA	0	0	11	0	0	0
PB	193	0	2	0	171	0
PE	6	0	27	7	13	0
PI	0	0	2	0	0	0
PR	2	0	4	0	0	0
RN	0	0	1	0	0	0
SE	0	0	1	0	0	0
SP	4	0	0	0	0	0
TO	0	0	1	0	0	0
Total	423	21 (5,0%)	66	8	184	0

Note: In the survey of 2015, data related to state of origin for the 34 migrants recruited to work in Arceburgo were not obtained.

Table 2
Total number of examined samples, *S. mansoni* positive samples, and positivity rates (%), according to the year of the study, to the category, Migrant, Non-migrant or Schoolchildren, and to the municipality where the samples were collected.

MUNICIPALITY	Guaranésia				Arceburgo			
	2009		2015		2012		2015	
Involved individuals	Migrant	Non-migrant	Migrant	School children	Migrant	Non-migrant	Migrant	School children
Examined fecal samples	423	0	66	99	184	86	34	48
<i>S. mansoni</i> positive samples	21	0	8	1	0	0	0	0
<i>S. mansoni</i> positivity rates	4.96%	0%	12.12%	1.01%	0%	0%	0%	0%

Table 3
City and respective state of origin, for the eight *S.mansoni* positive migrants detected in the parasitological survey carried out in 2015, in Guaranésia.

CIDADE DE ORIGEM	ESTADO	Total
Macaparana		1
Nazaré da Mata	PE	2
Vicência		4
Vitória da Conquista	BA	1
TOTAL		8