

Psychiatry disorders and dengue

Is there a relationship?

Leonardo Caixeta¹, Paulo Verlaine Borges Azevedo²,
Marcelo Caixeta³, Cláudio Henrique Ribeiro Reimer²

ABSTRACT

Objective: The aim of this study was to examine the relationship of compulsive hoarding with dengue. **Method:** Fifty two adults notified by health vigilance authorities because of inappropriate trash accumulation in vacant lots in Goiânia, Central Brazil, completed a questionnaire regarding the presence and severity of hoarding behavior (Hoarding Rating Scale-Interview HRS-I). Five dimensions of hoarding are evaluated with this instrument: difficulty using spaces due to clutter, difficulty discarding possessions, excessive acquisition of objects, emotional distress and functional impairment due to hoarding behaviors. **Results:** The sample was primarily male, with an average age of 49 years. Eighty six percent of the sample scored 14 or greater on the HRS-I, indicating pathological hoarding. The medias of the five HRS-I domains were high, indicating severeness of all dimentionis of pathological hoarding. **Conclusion:** These results highlight the relationship between psychiatric disorder and actions upon environmental conditions that favors dengue, as well as its associated public health burden.

Key words: dengue, psychiatry, compulsive hoarding, public heath.

Transtornos psiquiátricos e dengue: existe uma correlação?

RESUMO

Objetivo: O objetivo deste estudo foi examinar a relação entre colecionismo compulsivo e a dengue. **Método:** Cinquenta e dois adultos notificados pelas autoridades de vigilância sanitária por causa do acúmulo inadequado de lixo em lotes vagos em Goiânia, no Brasil Central, completaram um questionário sobre a presença e gravidade de comportamentos de colecionismo (Hoarding Rating Scale - Interview - HRS-I). Cinco dimensões de colecionismo são avaliadas com esse instrumento: a dificuldade de utilização do espaço devido à intensa desorganização, dificuldade de descartar pertences sem função, aquisição excessiva de objetos, distúrbios emocionais e comprometimento funcional devido a comportamentos de colecionismo. **Resultados:** A amostra foi predominantemente do sexo masculino, com idade média de 49 anos. Oitenta e seis por cento da amostra atingiu 14 pontos ou mais na HRS-I, indicando colecionismo patológico. As médias dos cinco domínios do HRS-I foram altas, indicando gravidade de todas as dimensões de colecionismo patológico. **Conclusão:** Estes resultados ressaltam a relação entre transtorno psiquiátrico e as ações sobre as condições ambientais que favorecem a disseminação da dengue, bem como o problema de saúde pública associado.

Palavras-Chave: dengue, psiquiatria, colecionismo compulsivo, saúde pública.

Correspondence

Leonardo Caixeta
Instituto da Memória e
do Comportamento
Av. Cristo Rei 626 / Setor Jaó
74674-290 Goiânia GO - Brasil
E-mail: leonardocaixeta1@gmail.com

Compulsive hoarding is defined, in most cases, as 'the inability to resist the urge to acquire possessions and to discard possessions'^{1,2}. Hoarding is currently categorized as a symptom of both obsessive-compulsive disorder (OCD) and ob-

Received 28 January 2011
Received in final form 1 July 2011
Accepted 8 July 2011

Programa de Pós-Graduação em Saúde Pública do Instituto de Patologia Tropical e Saúde Pública e Programa de Ciências da Saúde da Universidade Federal de Goiás (UFG), Goiânia GO, Brazil: ¹Professor Associado de Neuropsiquiatria do Curso de Medicina da UFG; ²Professor Titular de Psiquiatria da Pontifícia Universidade Católica (PUC-GO), Goiânia GO, Brazil; ³Médico Assistente do Hospital das Clínicas da UFG.

sessive-compulsive personality disorder. The prevalence of compulsive hoarding in the community has been estimated at between 2 and 5%³, significantly higher than the rates of OCD and other disorders, such as panic disorder and schizophrenia.

Dengue fever is considered to be one of the major public health problems in Brazil. In fact, Brazil has become the country that reports the largest number of cases in the world to the WHO, accounting for over 70% of cases reported in the Americas⁴. In the process of occupying space in modern cities, particularly in developing countries like Brazil, humans have created the conditions for the occurrence of many diseases, and in the specific case of dengue these conditions (mainly accumulation of garbage in living urban areas) are extremely favorable for its biological cycle (virus-vector-man)^{4,5}.

We aimed with this study to detect pathological behaviors, most specifically compulsive hoarding, as a contributor to the habit of accumulating garbage and keeping trash, creating favorable environmental conditions to the dengue proliferation.

METHOD

Between August 2010 and December 2010 we interview the owners of 60 vacant lots in Goiânia, GO, who have been notified by local sanitary regulatory agency because of the garbage accumulation in their vacant lots, in the context of a program designed to prevent dengue in this capital. Goiânia has been reported as one of the most affected cities by dengue in Brazil⁵. All participants were invited to sign the informed consent before conducting the search. Eight subjects have refused to participate. The remaining 52 subjects answered a questionnaire designed to diagnosis and pontuate the severity of compulsive hoarding: the Hoarding Rating Scale-Interview (HRS-I)⁶. The sample size was then defined from the total cases sequentially notified by health authorities during the stipulated study period.

The HRS-I consists of five questions intended to reflect the proposed dimensions of hoarding: difficulty using urban spaces due to clutter, difficulty discarding possessions, excessive acquisition of objects, emotional distress due to hoarding behaviors, and functional impairment due to hoarding behaviors. Each item is rated on a nine-point scale from 0 (none) to 8 (extreme). The interviewer asks the initial questions, probing with follow-up questions (based on clinician judgment) as needed to make an independent rating of severity. A total HRS-I score was derived by calculating the sum of all five items. All raters were psychiatrists trained in the use of the HRS-I by one of the study authors (LC) who has extensive experience interviewing hoarders. The HRS-I has shown high internal consistency and cross-context reliability, correlates strongly with other measures of hoarding, and reliably discriminates hoarding from nonhoarding participants (an optimal cutoff of 14 shows sensitivity and specificity of 0.97)⁶. We use forward-translations and back-translations (provided by an independent translator, whose mother tongue is English) in order to use HRS-I. After that, we conducted a group discussion and formal evaluation of semantic equivalence between the original English version and the Brazilian one. Then we pre-test the instrument on the target population in ten individuals representative of those who were administered the questionnaire.

This study was approved by the ethics committee of the Federal University of Goiás.

RESULTS

The sample was primarily male, with an average age of 49 years. Participants scored in the clinical range for detecting hoarding on the HRS-I⁶. Eighty six percent of the sample scored 14 or greater on the HRS-I; this cutoff reliably distinguishes those with clinically significant hoarding from those without hoarding. The medias of the five HRS-I domains were high, indicating severe-

Table. Sample description (n=52) regarding demographics and HRS-I total and partial data according each domain.

	N with data	M (SD)	N (%)
Age	52	49.1 (10.51)	
Male			38 (73.0%)
HRS-I clutter	52	5.3 (2.11)	
HRS-I difficulty discarding	52	5.8 (1.70)	
HRS-I acquiring	52	5.1 (2.2)	
HRS-I distress	52	6.3 (1.8)	
HRS-I impairment	52	5.8 (2.1)	
HRS-I total	52	28.4 (7.7)	
HRS-I ≥ 14	52		45 (86.5%)

HRS-I: Hoarding Rating Scale-Interview; N: number.



Figure. Picture showing tons of trash being removed by health authorities in a lot of one of the subjects evaluated.

ness of all dimensions of pathological hoarding. Table shows sample description regarding demographics and HRS-I total and partial data. Figure shows an example of the level that reaches the accumulation of garbage in a lot of one of the subjects analyzed.

DISCUSSION

This study reflects the largest examination to date of the presence of compulsive hoarding in a Brazilian sample, as well as the potential impact of this psychiatric disorder on public health. An expressive percentage of participants scored high on all items and on the total HRS-I score. Forty five (86.5%) scored above cutoff score, indicating the high prevalence of pathological hoarding in this sample composed by subjects whose behavior poses a threat in the increasing proliferation of dengue mosquito *Aedes aegypti* by trash accumulation in prohibited areas represented by vacant lots. The scores in the five domains of HRS-I in this Brazilian sample of pathological hoarding is in accordance with other samples from abroad^{6,7}.

Hoarding is associated with substantial functional impairment, as clutter prevents the normal use of space. Because of that, hoarding can be considered a potential dangerous psychiatric problem, putting people at risk for poor sanitation, with health risks for diseases associated to the proliferation of vectors in an appropriate environment, as is the case for dengue. In fact, hoarding has been associated with substantial health risks by some authors^{7,8}, but the relationship between pathological hoarding and dengue has never been done. In the other hand, there is much information regarding the association of pathological behavior and mental illness with increasing risk of several infectious diseases such as AIDS, hepatitis C and B, syphilis, and others^{9,10}.

A collector is defined as a person who collects things for a specific purpose be it hobby, business or personal

satisfaction. In such instances, the act of collecting objects such as stamps, coins or works of art represents voluntary, controlled, goal-directed, selective searching. Abnormal patterns of collecting with a tendency to store items in a disorganized manner has been observed following brain damage, particularly frontal lobe, and the term collectionism was proposed by Volle et al.¹¹ to describe it. The presence of collectionism could be a helpful clue towards diagnosis of Diogenes syndrome¹². Hoarding behavior in Diogenes syndrome could be a form of motor perseverance, or express an excessive reaction to environmental stimuli in the absence of a planned process directed toward specific items. Therefore, some of the subjects of our sample may present pathological hoarding in the context of Diogenes syndrome. Diogenes syndrome is a behavioral disorder of the middle age and elderly people. Symptoms include living in extreme squalor, a neglected physical state and unhygienic conditions. This is accompanied by a self-imposed isolation, the refusal of external help and hoarding¹³. Hoarding, the major symptom of Diogenes syndrome, has been investigated more thoroughly in the literature than the syndrome itself. Patients suffering from Diogenes syndrome are usually discovered by chance, either because of a somatic illness, or as a result of social intervention related to their behavioral problems, as might be the case in our study. Management of the syndrome is difficult and ethically challenging, as the patient does not seek help¹².

The results of this study have several implications for intervention research. The chronic and longstanding nature of compulsive hoarding underscores the public health burden of this condition^{14,15} and the need for effective mental health and social service interventions in order to prevent trash accumulation and consequent proliferation of dengues' vector *Aedes aegypti*.

This study has some limitations. First and most important is the eligible cutoff point of 14 as a frontier that distinguishes those with clinically significant hoarding from those without hoarding. Although this cutoff reliably distinguishes these groups within American population this may not be the case with Brazilian samples and therefore a validation study conducted in Brazil may clear this issue in the next future. Besides that, caution should be taken regarding the completion of questionnaires by individuals with hoarding, since many of these can hide their symptoms, mainly because they are in a situation of dispute with the town hall, or even because some individuals avoid exposing the mental symptoms for fear of stigma. The relationship between pathological hoarding and dengue needs to be replicated in other studies to confirm our impression.

REFERENCES

1. Pertusa A, Fullana MA, Singh S, Alonso P, Menchón JM, Mataix-Cols D. Compulsive hoarding: OCD symptom, distinct clinical syndrome, or both? *Am J Psychiatry* 2008;165:1289-1298.
2. Jefferys D, Moore KA. Pathological hoarding. *Aust Fam Physician* 2008;37:237-241.
3. Samuels JF, Bienvenu OJ, Grados MA, et al. Prevalence and correlates of hoarding behavior in a community-based sample. *Behav Res Ther* 2008;46:836-844.
4. WHO/TDR. Dengue, guidelines for diagnosis, treatment, prevention and control. Geneva: WHO Press, 2009.
5. Siqueira-Junior JB, Maciel IJ, Barcellos C, et al. Spatial point analysis based on dengue surveys at household level in central Brazil. *BMC Public Health* 2008;20:361-370.
6. Tolin DF, Frost RO, Steketee G. A brief interview for assessing compulsive hoarding: the Hoarding Rating Scale-Interview. *Psychiatry Res* 2010;178:147-152.
7. Steketee G, Frost RO, Tolin DF, Rasmussen J, Brown TA. Waitlist-controlled trial of cognitive behavior therapy for hoarding disorder. *Depress Anxiety* 2010;27:476-484.
8. Steketee G, Frost RO, Kim HJ. Hoarding by elderly people. *Health Social Work* 2001;26:176-184.
9. Brunette MF, Drake RE, Marsh BJ, Torrey WC, Rosenberg SD. Responding to blood-borne infections among persons with severe mental illness. *Psychiatr Serv* 2003;54:860-865.
10. Guimarães MD, Campos LN, Melo AP, Carmo RA, Machado CJ, Acurcio FA. Prevalence of HIV, syphilis, hepatitis B and C among adults with mental illness: a multicenter study in Brazil. *Rev Bras Psiquiatr* 2009;31:43-47.
11. Volle E, Beato R, Levy R, Dubois B. Forced collectionism after orbitofrontal damage. *Neurology* 2002;58:488-490.
12. Montero-Odasso M, Schapira M, Duque G, et al. Is collectionism a diagnostic clue for Diogenes syndrome? *Int J Geriatr Psychiatry* 2005;20:709-711.
13. Caixeta L. Diogenes, homeless population, antimanicomial movement and cinism. *Rev Bras Psiquiatr* 2007;29: 91.
14. Tolin DF, Frost RO, Steketee G, Gray KD, Fitch KE. The economic and social burden of compulsive hoarding. *Psychiatr Res* 2008;160:200-211.
15. Frost RO, Steketee G, Williams L. Hoarding: a community health problem. *Health Soc Care Community* 2000;8:229-234.