

Animal accumulators from the perspective of health promotion and surveillance

Acumuladores de animais na perspectiva da promoção e da vigilância em saúde

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ABSTRACT

Animal accumulation is considered a complex phenomenon that, although recognized in the academic universe, is still difficult to solve for health management. Studies on accumulation, mainly of animals, are incipient in Brazil. This literature review article aims to warn about this complex morbidity, which is increasingly common to urban agglomerations, indicating health promotion and surveillance actions to ensure the health of animals, the accumulator and the community to which it belongs. It is suggested that a new approach to animal accumulation disorder may counteract the poor - including academic - visibility demonstrated in the literature review, increasing investment in specific interventions that may explain this important public health problem in Brazil.

Keywords: Hoarding disorder; self-neglect; pets; Public health surveillance.

RESUMO

A acumulação de animais é considerada um fenômeno complexo que, apesar de já ser reconhecido no universo acadêmico, ainda é de difícil solução para a gestão da saúde. Os estudos a respeito de acumulação, principalmente de animais, são incipientes no Brasil. Este artigo de revisão da literatura tem por objetivo alertar a respeito desta complexa morbidade, cada vez mais comum às aglomerações urbanas, indicando ações de promoção e de vigilância em saúde que permitam garantir a saúde dos animais, do acumulador e da coletividade a qual ele pertença. Sugere-se que uma nova abordagem em relação ao distúrbio de acumulação de animais possa combater a pouca visibilidade - inclusive acadêmica - demonstrada na revisão da literatura, ampliando o investimento em intervenções específicas que possam explicitar esse importante problema de saúde pública no Brasil.

Palavras-chave: Transtorno de acumulação; autonegligência; animais de estimação; Vigilância em Saúde.

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INTRODUCTION

Animal Hoarding Disorder (AHD), also known as Noah's Syndrome¹, is a complex phenomenon that raises issues related to public health and the legal environment². Some characteristics indicative of the behavior of an animal accumulator can be observed, such as the gathering of a large number of animals, normally collected from the streets; too much attachment to guarded animals; and failure to meet basic animal welfare needs, with no guarantee of physical integrity, veterinary care, and adequate access to food and hygiene. However, because it is a mental health disorder, the accumulator does not have the ability to understand and recognize the cruelty and suffering attributed to confined animals, reaching extreme situations of denying eventual deaths of those under guardianship³⁻⁵.

In general, animal accumulators have no critical sense of the pathological abnormality of their attitude, but their behavior undoubtedly provokes distressing reactions from family, neighbors and friends, and is an important motivator for requesting intervention by the local health system, urgent veterinary activities, public order and environmental management bodies, as well as legal demands for deviant personality⁶⁻⁸.

A review on the topic identified differences between the accumulation of animals and the continuous accumulation of objects, with a predominance of women in advanced age, who present later symptoms to the habit of accumulation, living in poorer sanitary conditions and with a higher appearance of disorder, however, with a smaller variety of items accumulated among those diagnosed as animal accumulators⁹.

Studies on accumulation, mainly of animals, are incipient in Brazil, with few authors addressing the theme and, therefore, there is not much material to reinforce specific interventions to not only provide adequate assistance to the population considered vulnerable, but also support a conceptually expanded health policy that encompasses society and its related animals¹⁰.

Thus, the objective of this review was to alert about this morbidity, increasingly common to urban areas in Brazil, and to develop suggestions to support a multidisciplinary action of health promotion and surveillance in situations of necessary intervention by the public power.

METHODS

Critical review of the narrative type of literature. To recognize the state of the art regarding animal accumulation under the logic of health promotion and prevention, a literature review was conducted in three databases of undoubted importance for topics related to public health: Web of Science, Public Medline (PubMed) and Virtual Health Library (VHL). For this, we used search terms in Portuguese, Spanish and English and retrieved a general search (Title, Summary and Subject/Descriptors) and a specific search

by Title - the content of publications between the years 2014 and 2019, also indicating the amount of open access manuscripts made available on each of the digital platforms. It was also verified the year of publication of the manuscripts that came closest to the subject of study, selected through the use of the search terms that most expressed it. Results were expressed in Charts 1, 2 and 3.

RESULTS AND DISCUSSION

Among the search terms that best synthesized the retrieval of manuscripts that permeated the theme of animal accumulation, the most relevant were [hoarding disorder AND animal], [animal hoarding], [transtorno de acumulação AND animal] and [síndrome de Diógenes AND animal]. The representation of their quantitative, as well as of all the descriptors used, are expressed in Table 1, being identified with the bold font those results that were considered of most relevance. The highlight is the number

Table 1: Queried databases and retrieved manuscripts in general search.

| Search terms | Databases consulted* | | |
|--|----------------------|---------------|----------------|
| | Web of Science | PubMed | VHL |
| Hoarding | 959 (243) | 470 (156) | 1385 (820) |
| Acumulação | 2 (0) | 1 (1) | 804 (654) |
| Colecionismo | 0 | 0 | 310 (269) |
| Acumulación | 34 (12) | 5 (2) | 5002 (1626) |
| "Hoarding disorder" | 220 (62) | 189 (65) | 299 (265) |
| "Transtorno de acumulação" | 0 | 0 | 213 (191) |
| Entesouramento | 0 | 0 | 65 (56) |
| "Hoarding disorder" "Animal" | 9 (4) | 10 (3) | 15 (15) |
| "Transtorno de acumulação" "Animal" | 0 | 0 | 10 (10) |
| "Compulsive hoarding" | 40 (7) | 24 (6) | 131 (78) |
| "Acumulação compulsiva" | 0 | 0 | 2 (2) |
| "Acumulación compulsiva" | 0 | 0 | 2 (1) |
| "Colecionismo compulsivo" | 0 | 7 (2) | 1 (1) |
| "Compulsive hoarding" "Animal" | 1 (0) | 0 | 6 (5) |
| "Animal hoarding" | 20 (2) | 13 (2) | 16 (15) |
| "Acumulação de animais" | 0 | 0 | 2 (2) |
| "Acumulación animal" | 0 | 2 (2) | 0 |
| "Acumulación de animales" | 0 | 0 | 1 (1) |
| "Síndrome de Noé" | 0 | 0 | 0 |
| "Noah syndrome" | 1(0) | 6 (2) | 1 (1) |
| "Síndrome de Diógenes" | 0 | 0 | 224 (190) |
| "Diogenes Syndrome" | 29 (2) | 21 (3) | 105 (40) |
| "Síndrome de Diógenes" "Animal" | 0 | 0 | 9(9) |
| "Diogenes Syndrome" "Animal" | 1 (0) | 2 (1) | 2(2) |

*XX (YY) being XX = general research and YY = open access.

of English-language publications on the subject, as well as the important participation of the VHL in this quantity.

In addition to the search terms mentioned above, others were included as of secondary importance to the theme in question. It was observed that the term [síndrome de Noé] has no quotation in Portuguese and Spanish, but its translation into English [Noah syndrome] has six observations in the PubMed database between 2014 and 2019. That is why we also made a point of having it among the descriptors of this study. Other associations between search terms deserved our attention, such as [compulsive hoarding AND animal], also with six observations among those indexed in the VHL.

From these search terms, we chose the four combinations that we consider to have the greatest impact, as they have a larger contingent of observations in indexed manuscripts and better represent the problem of animal accumulation, to be included in the analysis of the publication periodicity expressed by the Table 2. Thus, we sought to reflect the recent production of academic relevance based on the indexing sources used, highlighting 2017 as the year with the highest production, followed by 2018 and 2014.

In Table 3 we tried to identify the importance of the theme in question, searching for manuscripts that had the search terms and their combinations in their title. The highlight was those manuscripts that were present on the three digital platforms using the association between English language search terms: [animal hoarding], with 16 appearances in manuscript titles indexed in

Web of Science, and [hoarding disorder AND animal], with five observations in the PubMed database.

As in Table 1, Table 3 sought to compare the amount of manuscripts deposited in these databases with the number available for open access, with a positive highlight for the VHL, which in addition to depositing the largest number of publications, maintains the largest open access manuscript collection among the three digital platforms used.

Of this content, based on academic and to the study relevance in question, associated with searches for gray or non-indexed literature (manuals, books, proceedings, electronic publications, etc.) on the Google Scholar digital platform, considered very important to contextualize the theme in face of the current demands of society, the references used in the organization of this study were selected.

Animal Accumulation Disorder: General Aspects

Early studies on animal accumulators describe these individuals as owners of a large contingent of animals who had certain common features: low income, being alone, and living in unhealthy conditions, and it is impossible to maintain the proper healthy conditions for raising animals. In addition, a strong sense of attachment prevents adoptions by others or rescues by civil society organizations, leading to situations where animal welfare and health are seriously threatened¹¹.

Table 2: Consulted databases and retrieved manuscripts by year of publication.

| Search terms | | Databases consulted* | | | Total |
|-------------------------------------|------|----------------------|--------|-----|-------|
| | | Web of Science | PubMed | VHL | |
| "Hoarding disorder" "Animal" | 2014 | 2 | 2 | 3 | 7 |
| | 2015 | 2 | 1 | 1 | 4 |
| | 2016 | 1 | 2 | 3 | 6 |
| | 2017 | 3 | 3 | 6 | 12 |
| | 2018 | 1 | 2 | 2 | 5 |
| | 2019 | 0 | 0 | 0 | 0 |
| "Transtorno de acumulação" "Animal" | 2014 | 0 | 0 | 0 | 0 |
| | 2015 | 0 | 0 | 1 | 1 |
| | 2016 | 0 | 0 | 3 | 3 |
| | 2017 | 0 | 0 | 6 | 6 |
| | 2018 | 0 | 0 | 0 | 0 |
| | 2019 | 0 | 0 | 0 | 0 |
| "Animal hoarding" | 2014 | 8 | 4 | 5 | 17 |
| | 2015 | 2 | 2 | 2 | 6 |
| | 2016 | 2 | 0 | 0 | 2 |
| | 2017 | 5 | 2 | 4 | 11 |
| | 2018 | 3 | 5 | 5 | 13 |
| | 2019 | 0 | 0 | 0 | 0 |
| "Síndrome de Diógenes" "Animal" | 2014 | 0 | 0 | 0 | 0 |
| | 2015 | 0 | 0 | 1 | 1 |
| | 2016 | 0 | 0 | 3 | 3 |
| | 2017 | 0 | 0 | 5 | 5 |
| | 2018 | 0 | 0 | 0 | 0 |
| | 2019 | 0 | 0 | 0 | 0 |

*XX = number of publications per year in general search.

Patronek⁴ opens discussion about diagnostic criteria for individuals who called themselves “animal collectors”, presenting these conditions as important for public health. In this study, the researcher characterizes them as individuals who accumulate large numbers of animals, to the point of not knowing for sure how many are under their tutelage; whereas they do not provide animals with minimum quality of life and health conditions; and who are unable to perceive the deteriorating state of the environment and the health and well-being of themselves, their families and the animals kept^{4,9}.

Over time, mental health specialists sought to define the etiopathogenesis and other nosological aspects of animal accumulation by adding a new criterion regarding the inability of the individual to recognize negative consequences due to their accumulating behavior^{9,10}. However, they only defined compulsive accumulation as a mental disorder in the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)¹² in 2013, and thus the medical description of symptoms remains continually refined and is the focus of broad debate^{3,4,9,10}.

Formerly considered as a possible symptom of obsessive compulsive disorder (OCD) or as an obsessive compulsive

personality disorder (OCPD), in this latest issue accumulation disorder has gained the status of individualized nosographic entity entitled ‘Hoarding Disorder’ (HD) and included in the ‘Obsessive-Compulsive Disorder and Related Disorders’ section. Animal hoarding, treated with ‘Animal Hoarding’ (AH), was characterized as a special manifestation of accumulation disorder¹².

Animal accumulators often neglect their own health and social life because they spend all their time, money and energy caring for their animals. They are emotionally overwhelmed, trapped in indecision and a sense of responsibility, and in some cases aware that their behavior is unreasonable and unhealthy. However, the stress of disposing of animals is too great for them to resolve the situation. Their homes are often depleted, as their income is almost exclusively for animals. It is very common to have health problems, both of the accumulator and the animals confined by this individual, either through inhalation of ammonia from the accumulation of feces, or diseases transmitted by flea bites, ticks or living with poor hygiene. There may be some difficulty in processing emotional information in conjunction with perceptive information, ie, physiological mechanisms to avoid awareness that they are causing pain and suffering to the animals they care for^{9,13-15}.

Table 3: Queried databases and retrieved manuscripts in search of titles.

| Search terms | Databases consulted* | | |
|--|----------------------|---------------|----------------|
| | Web of Science | PubMed | VHL |
| Hoarding | 411 (96) | 20 (2) | 240 (211) |
| Acumulação | 0 | 0 | 24 (21) |
| Colecionismo | 0 | 0 | 1 (0) |
| Acumulación | 0 | 0 | 36 (25) |
| “Hoarding disorder” | 112 (33) | 86 (35) | 91 (85) |
| “Transtorno de acumulação” | 0 | 0 | 5 (4) |
| Entesouramento | 0 | 0 | 1 (1) |
| “Hoarding disorder” “Animal” | 2 (1) | 5 (2) | 3 (3) |
| “Transtorno de acumulação” “Animal” | 0 | 0 | 1 (1) |
| “Compulsive hoarding” | 11 (1) | 4 (2) | 7 (5) |
| “Acumulação compulsiva” | 0 | 0 | 2 (2) |
| “Acumulación compulsiva” | 0 | 0 | 2 (1) |
| “Colecionismo compulsivo” | 0 | 0 | 0 |
| “Compulsive hoarding” “Animal” | 1 (0) | 0 | 0 |
| “Animal hoarding” | 16 (1) | 10 (1) | 11 (10) |
| “Acumulação de animais” | 0 | 0 | 1(1) |
| “Acumulación animal” | 0 | 0 | 0 |
| “Acumulación de animales” | 0 | 0 | 1(1) |
| “Síndrome de Noé” | 0 | 0 | 0 |
| “Noah syndrome” | 1(0) | 0 | 1 (1) |
| “Síndrome de Diógenes” | 0 | 0 | 2 (2) |
| “Diogenes Syndrome” | 17 (1) | 19 (3) | 21 (19) |
| “Síndrome de Diógenes” “Animal” | 0 | 0 | 0 |
| “Diogenes Syndrome” “Animal” | 1(0) | 1(0) | 1 (1) |

*XX (YY) being XX = search in title and YY = open access.

Animal Accumulation: A New Psychopathological Disorder

According to Ferreira *et al.*¹⁰, the scientific literature is still small regarding the amount of empirical studies that can help to unveil the complexity of animal accumulation disorder. However, due to the findings of his research, which contradict the concomitance between the accumulation of objects and animals, and supported by a literature review on the subject, it is necessary to establish a precedent for the discussion of a new nosographic category, proposing that animal collecting is understood as a new psychopathological disorder, with specificities that imply the distinction of this new condition of accumulation disorder^{4,9,10}.

Ferreira *et al.*¹⁰ report that of a sample of 33 animal accumulators, approximately 57% of individuals collected animals and inanimate objects at the same time, approximately 73% perceived themselves healthy, while 63% reported a health problem. Regarding gender, females predominated (73%) and 88% declared themselves divorced, widowed or single. This result corroborates with other studies, hypothesizing that the animal accumulator profile may be more related to female gender, advanced age and social isolation⁷⁻⁹. Of the total individuals interviewed in the survey¹⁰, 64% were elderly, which is in line with the DSM-5 and other empirical studies on the topic^{10,12}. This question raises the hypothesis that the older the individual, the greater the number of animals accumulated and the worsening of symptoms, which may be related to the impairment of the support network, which would reinforce the search for animals, as in a vicious circle¹⁶.

As for income, 76% received between 1 and 2 minimum wages; 61% indicated as a source of income the receipt of retirement or pension. However, low income, as well as low education, may be related to an information bias, as individuals were recruited by an organization that primarily serves individuals from the lowest socioeconomic status in the city of Porto Alegre, Rio Grande do Sul, Brazil¹⁰. DSM-5 indicates a low level of insight among animal accumulators, however 27% of individuals in the sample reported some difficulty due to accumulator behavior^{10,12}.

We can observe subtle differences between an inanimate object accumulator and an animal hoarding (AH)^{9,10}. The criterion of obstruction of circulation is a peculiar characteristic of the former, since animals are mobile, except if restricted to cages, containers, etc., and do not lead to obstruction of the rooms of a household¹⁷. Regarding the issue of disengagement from the commitment to accumulate objects or animals, the act of discarding objects from the donation of the animals kept in care must be distinguished¹⁰. Inanimate objects, in principle, do not require further attention, whereas animals require constant care regardless of the lack of capacity presented by the accumulator. It is hypothesized that the act of caring leads to the opportunity to create a bond between the accumulator and the animal, which may contribute to its undoing so easily^{18,19}. The DSM-5 criteria for HD do not specify what types of possessions are required for this diagnosis and, as animals are legally considered property, their accumulation seems to qualify as HD, although this issue is not yet resolved in the psychiatric literature^{9,17,20}.

Following the above reasoning, the arguments presented by Ferreira et al.¹⁰ to distinguish between HD and HA seem robust enough to suggest specific diagnostic criteria for animal accumulation disorder (HA), which are described below: a) presence of good or reasonable 'insight': the individual recognizes that animal accumulation beliefs and behaviors are problematic; b) presence of bad insight: the individual realizes that beliefs and behaviors related to animal accumulation are not problematic, despite evidence to the contrary; and c) absence of insight: the individual is fully convinced that animal accumulation beliefs and behaviors are not problematic, despite evidence to the contrary.

Sharing the findings of the aforementioned empirical research¹⁰, it is proposed that a new approach to animal accumulation disorder may bring some visibility of the problem, increasing investment in specific interventions that can address this important public health issue.

From theory to practice: aspects of intervention in animal accumulation cases

Often the drive to accumulate is fueled by overpopulation of domestic animals that, if not neutered, reproduce freely on the streets of the cities in which they seek survival^{13,17}. A large number of animals, often sick, dying or dead, are crammed

into living areas of the accumulator and his family. Droppings sometimes cover floors and walls, creating high concentrations of ammonia and organic aerosol contaminants, which pose serious health risks to occupants^{21,22}. Research indicates that the lack of adequate sanitary conditions is present in most cases of animal accumulation, which, associated with the large number of animals involved, increases the likelihood of transmission of zoonotic diseases initially to the occupants of these households, and later on community²³.

An institutional intervention protocol can even be established, whose basis of action should be common to situations that protect certain basic aspects related to health or social rights, but a wide range of services should be indispensable, contributing to the planning and execution of intervention directed at the particularities inherent in the case of accumulation in question. However, we should not automate professional procedures as if they were generalized situations. Each case must be thoroughly studied and treated as unique by the public authorities^{2,4,6,22}.

As an example of the complexity of the actions to be developed by the government, we will talk about the sex of the accumulator. A review of the literature indicates that the sex ratio is relatively uniform for cases of accumulation of objects, while animal accumulation is predominantly female²⁴. In a study of medical records related to animal accumulation in the USA, females accounted for 70 to 83% of the sample^{4,6,11}.

We should also note that there is a distinction between those who can have an accumulating behavior of animals from those who seek to live in a healthy way, maintaining acceptable health standards for both animals and the living environment⁴. In the US there is a very caricature character, called Crazy Cat Lady, who can be translated as a lone lady of reserved habits who has a reasonable contingent of domestic cats in her possession²⁵. The caricatured description is often confused with the stereotype of animal accumulators: a female, elderly, lonely, reserved-minded person who has an uncontrollable urge to acquire and care for animals and is unable to dispose of them even if there are negative impacts on human and animal health and welfare²⁶. Thus, it would be interesting for the local health service to organize itself to meet a peculiar demand of animal accumulators with a look toward the female gender, while seeking the full character of their actions in public health, because gender inequalities, even because of socially constructed prejudices, tend to deepen other social inequalities and all discriminatory forms²⁷⁻²⁹.

The same can be expected for the elderly, since in the case of accumulative behavior, the sample is frankly favorable to the elderly and, apparently, there is a direct relationship between the number of animals accumulated and the age of the accumulator^{4,12,16}. The National Elderly Health Policy³⁰ guarantees a differentiated

treatment for different groups of elderly, either in terms of age and socioeconomic or place of residence, which lead to differentiated demands, which have a mirror in the formulation of public policies for the segment³¹.

According to the law, every citizen is assured physical and mental health³². Multidisciplinary support from local health services is needed, as well as support structures - such as Núcleos de Apoio à Saúde da Família (NASF/Family Health Support Centers), Núcleos de Atenção Psicossocial (NAPS/Psychosocial Care Centers) and Centros de Atenção Psicossocial (CAPS/ Psychosocial Care Centers) - to guarantee the patient access to integral health. The current context of psychiatric care has, in the family, a privileged place for the practice of care, being necessary to observe it as a facilitator in the complex process of social reintegration of the accumulator³³⁻³⁵.

The action of health promotion agents with multidisciplinary interfaces can be adopted as a way to reduce conflicts of interest between society and animal accumulators, always seeking to include surveillance and disease prevention with a collective view, as This will provide an opportunity to detect issues related to environmental health conditions. Home Care (HC) is one of the tools that is able to enable integral care processes for patients with accumulation disorder, and it is important that FHS professionals are aware of the patient's history and current nosological framework, supporting the approach in a tripod: identification, health protection and networking³⁶.

The conduct given to the case by the health professional goes through the verification of the suspicion or denunciation of animal accumulation, being important the observation of the sanitary and hygienic conditions in which the possible accumulator, the animals and the environment in which they live^{20,34}. Attention should be paid to the population of animals, their physical conditions and the apparent possibility of abuse⁴. The conditions for maintaining the functionality related to the property in question should also be appreciated^{17,36}. If necessary, support from a veterinarian will be necessary for a better environmental diagnosis³⁵.

As the resources provided by the FHS do not address all the needs involved in animal accumulation situations, concomitant actions are needed from different sectors of public management due to a network articulation³⁶. Cases of accumulation of animals in large settlements pose a particular difficulty, because spaces available to house animals collected from sanitary actions, or are full capacity, or do not exist³⁶⁻³⁸.

Other structures of public power should be used to cope with the complex logistics related to the interventions in question, seeking to provide a safe response to society. When there is accumulation of animals, the case is too complex to

be operationalized by a single sphere, requiring the support of the Secretariats of Health, Social Welfare, Promotion and Defense of Animals, Environment, Traffic, Public Order and Conservation, depending on the administrative arrangements of the municipality, in addition to the organs of the State Police and the Judiciary directly involved^{21,22,39}.

Since animals are defined as possession, that is, an individual property and defended by the good legal practices, the public power may request the guardianship of them, under provisional regime, so that they are rescued, received, properly fed and treated of possible pathologies when there are demands that justify such mobilization^{20,21}. Added to this is the need to prove the lack of zeal for the animal and the maintenance of a situation related to mistreatment, as they can be remedied by the simple legal interpellation of the decision by the interested party, legal representative or the Public Defender, if not done so. However, it is notorious that, despite being living in unfavorable conditions, these animals have a true feeling of happiness in being with their "guardian", which is a true and reciprocal feeling that makes the success of an intervention difficult, especially if poorly planned^{20,21}.

A therapeutic project should be organized, designed to meet the needs of the citizen who has the grievance, and it is important that the actions are concatenated and based on local reality, with the support of a multidisciplinary team³⁴. Relapses are common, reaching absolute numbers of 100% of cases, if mishandled¹⁵⁻¹⁷. To this end, warn Rafael and Moraes³⁶, the fragility of the intervention is something that should be observed, as it is natural that there are gaps in communication between the various health professionals.

CONCLUSION

When deciding to intervene in a case of animal accumulation disorder (AH), the government should make sure that the process is safe for both the citizen who will suffer from the disruption of habits and customs, and the community that surrounds it. The actions must be concatenated among the various public structures, in order to mitigate possible feelings of loss and the risks to the deterioration of the already altered physical or emotional health of those who suffer the intervention, whether human or animal.

It is also necessary to provide the involved public agents with operational and management tools, as well as the legal apparatus so that they can perform their tasks satisfactorily, restoring balance to the environment and solving the demands of society.

Primary care services, in conjunction with other structures of the local health network, should be committed, through actions concatenated with family members, society and other

state organizations, such as the Judiciary, to build social reintegration projects, respecting the individual characteristics of the subjects involved and the principles of citizenship, in order to reduce stigma and promote better quality of life to those who have aggravation in question, if not avoiding, at least mitigating possible relapses.

Animals should be given differentiated attention, as they are innocent victims of a pathological process of others, and it is important to analyze their physical and emotional capacity prior to removal actions to avoid further damage when in contact with new reality, through a new guardian or contact with other sheltered animals.

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