



ASSOCIAÇÃO BRASILEIRA DE ERGONOMIA

Revista Ação Ergonômicawww.abergo.org.br

**THE INTERFACE BETWEEN USER-CENTERED DESIGN (UCD) AND
HUMANIZED SUPPORT FOR THE HOMELESS POPULATION (HSP):
FOUNDATION OF THE INTERIOR DESIGN PROJECT FOR CASA DE APOIO
PARANGOLÉ**

Gizelli Flor de Jesus: Universidade do Vale do Itajaí; gizellijesus@gmail.com

Andrea de Aguiar Kasper: Universidade Federal de Santa Catarina;
andrea.kasper@posgrad.ufsc.br

ABSTRACT

This article deals with the theoretical and methodological foundation of an Humanized Support House Interior Design for Street Situation People (SSP), in Florianópolis, Santa Catarina, Brazil. Aimed at serving and supporting SSP, the article intends to present the research to substantiate an ergonomics correction proposing an Support House Interior Design Model linked to Florianópolis town hall. The Parangolé House was inspired by the multifunctionality of the environments, User-Centered Design (UCD) and ergonomics guidelines. It constitutes a case study, with investigation aided by the application of research techniques, such as: documentary and bibliographic survey in secondary sources, semi-structured interviews, observations and on-site investigation of some Institutions focused on SSP, and application of the Analysis Content technique. This research intends to propose a Model Project that can contribute to support researchers and professionals interested and involved in Interior Design Institutions that support homeless people, exposing relevant solutions that confront legal and normative determinations to real situations, emphasizing demand needs, ergonomic principles, such as those referring to the application of the UCD, in humanized support houses.

KEYWORDS: Support House; Social project; Interior Design (ID); Street Situation People (SSP); User Centered Design (UCD).

1. INTRODUCTION

The present research was conducted to provide the foundation for the Interior Design Project of a Shelter for the homeless population, adopting the guidelines of User-Centered Design (UCD). As outlined in DECREE No. 7.053 (2009), which establishes the National Policy for the Homeless Population (PSR):

(...) the homeless population is considered to be a heterogeneous group that shares extreme poverty, disrupted or weakened family ties, and the lack of regular conventional housing. They utilize public places and degraded areas as living and sustenance spaces, temporarily or permanently, as well as shelter units for temporary overnight stays or as temporary housing.

In turn, welcoming entails:

(...) a professional intervention process that incorporates human relationships. It is not limited to the act of receiving someone but to a sequence of actions within a work process. It involves qualified social listening, with the valorization of the demand seeking the offered service, the identification of the problem situation, both on an individual and collective level (SANTOS, 2006, p. 58)

The definition of a Support House is also described by DECREE No. 7.053, in Article 8, as:

A location with a basic standard of quality, safety, and comfort for a temporary support network, where there should be observed capacity limits, operational and coexistence rules, accessibility, hygiene, and geographic distribution of the accommodation units in urban areas, respecting the right of the Homeless Population to stay, preferably in cities or urban centers.

The strong social inclination of the Interior Design Project to address the ambiance in a way that caters to the Homeless Population (PSR) sparked the initial motivation for this project. It also aimed to prove the importance of this project as a vehicle for social inclusion, even as a shift in the paradigm of Interior Design (DI) and the reductionist view of its vocation, exclusively directed towards the middle and upper-class audience. This demystification of DI allows envisioning its application for other marginalized groups in society, clarifying it as a profession that can contribute to social transformation, in this case, directed towards the PSR.

Throughout the research to support the interior design project, the focus of this article, there was profound reflection by the authors, guided by the case studies conducted, interviews with the PSR, and professionals working in these institutions. The information collected in the exploratory phase of the research stimulated reflection on how DI could transform existing and unqualified spaces into places where users could experience it in a way that made them feel at home, even if temporarily. In this case, it was considered that the roof, support, coexistence, assistance, and psychosocial care would be paramount for the relationships within the collective home, where basic needs are as important as individuality.

For the Interior Design Project in question, it was chosen to design it for the male population, as the vast majority of users of the researched Support Houses were men. Additionally, the precariousness of existing institutions, the lack of quality and inadequacy of the configuration of the locations, coupled with the almost absence and concern for the characteristics of these users, justified the present research. Given the above, this article aims to present the research to support and apply corrective ergonomics to re-adapt, with quality and safety, a Support House in Florianópolis, Santa Catarina, Brazil, named Casa Parangolé. Regarding the perspective of ergonomic practice, the intervention in an existing situation (VIDAL, 2003; IIDA and BUARQUE, 2016) aims for correction and alignment to meet legal requirements and improve the general conditions of Support Houses, reorganizing it to enable quality accommodation and stay for the PSR.

2. TEORETICAL FRAMEWORK

The Support House addressed in this research is considered a Health Interest establishment that serves the Homeless Population (PSR), accommodating individuals for a maximum period of six months. The PSR, in turn, accesses these establishments through the POP Center, where, through registration, they undergo screening or filtering, directing them to Support Houses and other institutions such as General and Psychiatric Hospitals, the Department of Social Assistance, among others. Currently, in Florianópolis, there are two

Support Houses in operation with a capacity for approximately twenty-five people each, exclusively for men living on the streets. The target audience of the project was identified based on data collected at the POP Center in Florianópolis, where it was found that 86% of the house users were men, aged between 18 and 45 years old. Given this need, the decision was made to carry out the research process and the interior design project focused on this audience.

The Homeless Population (PSR) is defined as those in "conditions of extreme poverty, interruption or fragility of family ties, and lacking regular conventional housing. They are individuals who inhabit public places, degraded areas, and occasionally use shelters for overnight stays" (BRAZILIAN CONSTITUTION, Decree 7053, Art. 1, 2009). Considering the humanized nature of the project, the aim is to meet the recommendations of Kasper (2015), who defines humanization, in the context of Architecture and Interior Design, as follows:

It concerns the provision of spatial solutions aligned with human needs and characteristics, which tend to respect and support them simultaneously. Such solutions aim to promote well-being and general safety, as well as spatial interaction, considering the actors who benefit from the designed physical space.

The Support House aims to offer temporary shelter services in a humanized manner, in accordance with what is established by the Social Assistance System. Thus, Casa Parangolé focuses on supporting and welcoming men who are currently experiencing homelessness for a predetermined period. It provides a space that offers the necessary support to foster beneficial changes for these individuals during their stays, assisting them in taking their first steps towards a new life story and reintegrating into society.

¹Specialized Reference Center for the Homeless Population (PSR): A specialized service for the PSR that provides assistance from a multidisciplinary team (social workers and psychologists), meals (breakfast, lunch, and snacks), and personal hygiene.

¹ KASPER, Andrea de Aguiar. Hospital Architecture Discipline. Lecture 07: Humanization in Hospital Projects and Application of Universal Design. Teaching Material from the Hospital Design Discipline taught.

Some case studies conducted in the literature aided in the selection of project guidelines, providing important insights for the ambiance of the Support House. Highlighting the La Casa project, its contribution to the idea of a sustainable and humanized proposal is emphasized, redefining housing for the Homeless Population (PSR) and offering dignified accommodation. The project provides permanent supportive housing with individual occupancy units, providing stability and security for each tenant in their daily lives. The configuration of this case study, compared to on-site case studies and others at the national level, provided important insights for the research.

The design references in this research informed the definition of the concept for the ambiance of the Support House for the PSR, especially the outdoor facilities of the Inhotim Museum Park (Minas Gerais, Brazil), with the artwork "Invention of the Penetrable Color Magic Square." It proposes large areas of permanence and social interaction through shapes, colors, and materials, offering an enhanced experience for visitors. Similarly, the Gallery of Rope Wave project, located in Shanghai, China, inspired the design with its integrated spaces and use of natural materials such as rope, steel, and wood, facilitating of a much more affordable and environmentally friendly cost. The inspirations for Casa Parangolé stem from Hélio Oiticica's artistic experiences with samba schools, music, dance, and the interface of his art with the simpler public, as evidenced in Figure 01:

na UNIVALI, Campus de Balneário Camboriú, Santa Catarina. 2015.

² Projetado pelos escritórios de arquitetura *Studio Twenty Seven Architecture + Leo A Daly*, localizado em *Washington* no ano de 2014. O edifício possui sete pavimentos com um total de quarenta unidades, com área total é de mais de 2700 m². Além das unidades individuais, o edifício conta com uma sala comunitária e um pátio externo.

³ O destaque são as cordas retorcidas (ondulantes) tensionadas que transmitem ao ambiente térreo da casa as sensações de dinamismo e originalidade, com uma cenografia que permite ao usuário experiências sensorial e espacial que remetem ao conforto e ao aconchego.

Figure 01: Hélio Oiticica's Parangolés



The name "Parangolé" arose unexpectedly when the artist came across a street sign identifying an improvised shelter, built by a "beggar," on which read: "here is the Parangolé." Thus, in Oiticica's conceptualization, the Parangolé's main definition is the interaction between art and the public. Interconnected pieces are employed, worn or carried, they are capes made of colorful cloths, with or without words and photos, standards, and flags.

Source: www.faceclips.net. Acesso em 31 de dezembro de 2018.

The proposal of Casa Parangolé during the period of stay or residence of the Homeless Population (PSR) is its involvement with the created ambiance, in which the artwork only fully exists when the viewer participates by "dressing themselves with the artwork, to make it alive," on their own body. Thus, for each person, there is a distinct work, which leads to the idea of the possibility of positive personal and psychosocial changes. Oiticica's art can also serve as a vehicle for occupational therapy, in which users regain confidence, autonomy, and productivity, favorable to their reintegration into society.

Considering the importance for Parangolé of the direct influence of colors on the mood and well-being of the house's users, there was a concern to explain it, also in the proposed ambiance. Its importance in Interior Design and possible connection with the behavior of residents within the multicolored spaces is observed, going beyond its mere aesthetic function. Farina (2006, p. 2) addresses the various aspects of colors in ambiance projects, stating that:

"Colors influence human beings and their effects, both physiologically and psychologically, intervene in people's lives by creating joy or sadness, excitement or depression, activity or passivity, warmth or coldness, balance or imbalance, order or disorder, etc."

Thus, the use of colors served as a vehicle for sensory stimulation, combined with the physical stimuli of the Parangolé, which were made available in the ambiance to alleviate stress and in the therapies planned for the Homeless Population (PSR). The guidelines of User-Centered Design (UCD) were also adopted in the project to understand the interests and needs of the user. "Considering that users take into account the fulfillment of their expectations in choosing a particular product, user-centered design proposes the application of criteria that foresee in them a minimum level of stress and maximum efficiency in use" (KASPER, 2013, p. 194). In Casa Parangolé, elements present in the daily lives of the PSR, such as cardboard, rope, and colors, were used, which encourages the appropriation of space, creating a sense of belonging to the place. It is also noteworthy the application of NR 17 (1998) and ABNT NBR 9050 (2015), among other standards, aligned with the guidelines of UCD.

3. METHODOLOGICAL FOUNDATIONS

The methodological structure of this research primarily resulted from the guidance of Pacheco, Pacheco Júnior, and Pereira Filho (2007), Bardin (2010), and Kasper (2013), with the research method encompassing reasoning to obtain knowledge about the phenomenon under study, as cited by the mentioned authors. The applicability of the descriptive method allowed for the expansion of knowledge about the constituent elements of the phenomenon, considering issues involving description, recording, analysis, and interpretation of existing phenomena (GIL, 2008; PACHECO JÚNIOR, PEREIRA, and PEREIRA FILHO, 2007; KASPER, 2013). Exploratory research allowed for the enhancement of familiarity with the investigated object, employing systematic procedures to achieve essentially qualitative descriptions, in order to obtain reliable information about the context, as well as to understand the relationships between the elements involved (CERVO, BERVIAN, and DA SILVA, 2007; MARCONI and LAKATOS, 2008; KASPER, 2013).

The qualitative nature of the research sought to analyze complex or specific situations (RICHARDSON, 2008), mainly the priorities of the Support House for the Homeless Population (PSR), in light of the needs indicated by the demand. Consideration was given to positive and/or negative conditions regarding the dynamics of the investigated case studies and project references, the considerations of professionals working in some institutions, as well as the conditions of those institutions regarding compliance with

legislation, configuration, and sizing. Such condition aligns with the guidelines of User-Centered Design (UCD). In terms of depth and breadth, it is classified as a case study (KASPER, 2013), as it seeks to understand particular situations surrounding the Support House for the PSR, primarily in relation to the aforementioned.

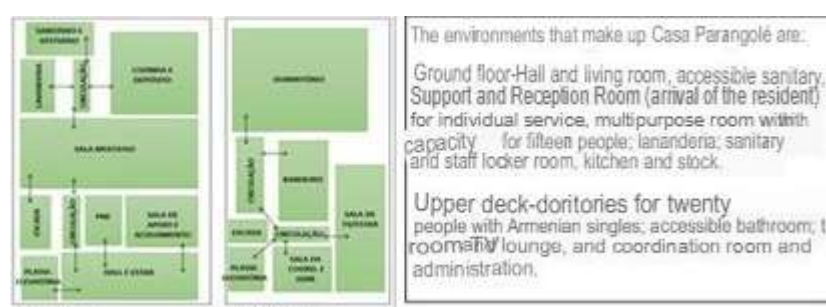
Other research techniques used were documentary and bibliographical research in secondary sources and on-site observation, as indicated by Richardson (2008), Silva (2005), and Pacheco Júnior, Pereira, and Pereira Filho (2007), such as systematic observation, with prior planning of what will be observed; non-participant observation, in which the fact was witnessed but not participated in; and individual observation. Semi-structured interviews were conducted with the team of employees and residents of the visited institutions, aiming to expand important information for the research. The interviews were conducted using open-ended questions focused on the investigated object, seeking to understand the dynamics and configuration needs of the Support House. The testimonies were recorded using a recorder, including experiences about the difficult reality in which the PSR lives. They took place between October 5th and 9th, 2017.

Content analysis was used for the treatment and discussion of information, following the guidelines of Campos (2004) and Bardin (2010), allowing for the identification of guidelines and project concepts (Parangolé), important to meet the demand's needs. For this purpose, the phases of pre-exploration, selection of analysis units, categorization, and referential interpretation of the analysis units were followed, allowing to identify the important elements and their meanings. These results will be discussed in section 04 of this article.

4. RESULTS

Given the application of research techniques, including the analysis of information obtained in case studies, the foundation for the Interior Design Model of Casa de Apoio Parangolé was obtained, considering the necessary interventions under the guidance of User-Centered Design (UCD). Although this article does not focus primarily on presenting the project itself, but rather on the design process, the intervention site (Figures 02 and 03) and the results in spatial terms are demonstrated here in a summarized manner.

Figure 02: Layout of environments and interdependence and flows of Casa Parangolé.



As can be seen in Figures 02 and 03, based on this theoretical foundation, it was possible to predict, with greater security and foundation: a) the configuration of circulations and movement spaces in the environments; b) the creation of multifunctional spaces, optimizing the use of the existing area; c) the use of materials of good quality, durability, and aesthetically suitable for the project's purposes, but of affordable cost; d) the use of vegetation inside the project, aiming to humanize and reduce residents' stress; e) the elaboration of a program of needs focused on UCD, carrying out good practices aiming at sustainable actions, including compliance with legislation.

- **01 and 02 - Gallery and Living Room** (Area = 16.59m²): Space located at the entrance of the Support House, divided into two sectors: gallery, with a perforated shelf to display objects made by the residents, providing extra income through their sales. The Living Room was designed to optimize the space located below the perforated staircase, which can be used by the target audience as well as visitors. In front of the living room, there is a corridor (Area = 7.67m²) and a panel with exclusive frames for users to deposit photos, thus being able to appropriate the house (sense of belonging). An atmosphere of welcome and protection was created. In these environments, it is possible to access the accessible toilet and the support/accommodation room. The decision for the elevator platform with a cabin aimed at a more accessible value than an elevator, being adopted for the project, which also meets accessibility issues (ABNT NBR 9050, 2015).

- **03 and 04: Support and Reception Room** (Area = 9.59m²): The location of this space was strategically designed to be close to the entrance, where professionals receive new residents in a humanized manner. This environment will also be used for the appropriate and specific treatment of each individual during their stay in the house. The pictures displayed on the walls of landscapes and plants indirectly and unconsciously refer to biophilia and, consequently, well-being.

- **05 and 06: Multipurpose Room** (Area = 45.53m²): Space for meals as well as occupational therapies. Among the therapies, there will be a partnership with a Design Studio that manufactures cardboard lamps. The intention of using this material was due to its significant importance for these individuals, who, while on the street, used cardboard as a mattress, blanket, or even shelter, helping them develop a type of craft, providing an additional income within the institution. The room has tables and a high counter overlaid on one of them, thus offering options of varied heights that facilitate the execution of tasks, determining the choice of which table to use, either for the

precision of reach desired or based on the individual who will execute it. Tensioned ropes also compose the environment, arranged sometimes vertically, sometimes twisted, bringing a unique movement to the space, as well as determining the flow of circulation within the spaces.

- **07 and 08: Kitchen and Stockroom** (Area = 13.06m²): This space will be used by the cooks to prepare main meals, but users will also have access to make snacks or get something to drink. The walls are all painted in white, bringing an air of "order, simplicity, cleanliness" (FARINA, 2006, pg. 97). It has pictures displayed on the wall with photos of spices, giving it a home kitchen atmosphere.

Figure 03: Application of guidelines, concept, and User-Centered Design (UCD) in the Interior Design Project of Casa Parangolé.



Source: Author's own work (2018) based on Flor de Jesus (2017 and 2018).

In Figure 03, several environments of the Support House are depicted, described based on the application of the guidelines from the "Parangolé" concept and User-Centered Design (UCD) in the project. The colors employed followed Farina's (2006) guidelines. The guidelines and project concept were applied to meet the needs of the Interior Design Project of a Support House specialized in accommodating the PSR in a humanized manner.

5. CONCLUSION

A ergonomic correction intervention applied in the Parangolé Support House was carried out to readjust and humanize the residents' living and welcoming space. The Interior Design Project conducted, based on the completed research, reinforces the need for different disciplines focused on projects, emphasizing the social aspects, to meet the diverse specificities and needs of their users. In this way, it is possible to achieve more effective results, in the case of the reception and permanence characteristics of the PSR, considering a Needs Program focused on the project's objectives.

The research techniques for obtaining and processing the data provided important project information, which allowed solutions for the space appropriation by the users through a dynamic layout, planned flexibly, valuing aesthetic and biopsychosocial functions, and the work of qualified professionals. The House aims to serve as a vehicle for the restoration of dignity, through service, appreciation, welcoming, social interaction, support, and assistance spaces, for a determined period, with prepared professionals. It is believed that the process that sought the basis for the Interior Design Model Project of the Parangolé Support House will help in enhancing the quality of these houses, offering theoretical-conceptual support for other projects, including designers and researchers in the field.

BIBLIOGRAPHIC REFERENCES

AGNER, luiz. *Ergodesigne arquitetura de informação - Trabalhando com o usuário*. 4. ed. Rio de Janeiro, RJ: Senac, 2018.

ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS. NBR 9050: *Acessibilidade a edificações, mobiliário, espaços e equipamentos urbanos*. 3 ed. Rio de Janeiro: ABNT, 2015. 148 p.

AZEVEDO, Murillo Nunes de. *A reconstrução humana - o outro lado da comunicação de massa*. Rio de Janeiro, RJ. Civilização Brasileira, 1971.

BARDIN, Laurence. *Análise de Conteúdo*. Trad. Luís Antero Reto e Augusto Pinheiro. Lisboa: Edições 70, 2010.

BRASIL. Política Nacional para a Inclusão Social da População em Situação de Rua. Decreto nº 7.053, de 23 de dezembro de 2009– Governo Federal – Brasília/DF. Maio de 2008. Disponível em:

<http://www.mpsp.mp.br/portal/page/portal/cao_civel/acoes_afirmativas/Pol.Nacional-Morad.Rua.pdf> Acessado em: 07 de outubro de 2017.

BRASIL. Presidência da República - Casa Civil. Decreto nº 7.053, de 23 de dezembro de 2009 - Governo Federal – Brasília/DF. Maio de 2008. Disponível em:

<http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2009/decreto/d7053.htm> Acessado em: 11 de outubro de 2017.

BROOKER, Graeme; STONE, Sally. *O que é design de interiores?*. 4. ed. São Paulo, SP: Senac, 2014.

BRITTO, Fernanda. 'La Casa' Habitação de Apoio / Studio Twenty Seven Architecture + Leo A Daly. 2012. Material retirado do site de Arquitetura Archdaily. Disponível em: <<http://www.archdaily.com.br/br/01-24504/la-casa-habitacao-de-apoio-studio-twenty-seven-architecture-mais-leo-a-daly>> Acessado em: 08 de outubro de 2017.

CAMPOS, Claudinei José Gomes. Método de Análise de Conteúdo: Ferramenta para a Análise de Dados Qualitativos no Campo da Saúde. *Revista Brasileira de Enfermagem*. Brasília (DF) 2004 set/out;57(5):611-4. Disponível em: <<http://www.scielo.br/pdf/reben/v57n5/a19v57n5.pdf>> Acesso em: 12 de novembro de 2018.

CERVO, Amado Luiz; BERVIAN, Pedro Alcino; SILVA, Roberto da. *Metodologia científica*. 6.ed. São Paulo (SP): Pearson Prentice Hall, 2007. 162p.

Diário Catarinense. Frio na Pele. 2013. Material retirado do site Clic RBS. Disponível em:

<<http://osoldiario.clicrbs.com.br/sc/noticia/2013/07/abrigo-para-moradores-de-rua-em-florianopolis-acolhe-170-no-fim-de-semana-4208055.html>> Acessado em: 21 de setembro de 2017.

FARINA, Modesto. Psicodinâmica das cores em comunicação. São Paulo: Edgard Blucher. 2006.

FLOR DE JESUS, Gizelli. Projeto de Interiores da Casa Parangolé. 2017. (Trabalho de Conclusão do Curso de *Design* de Interiores). Curso de Tecnologia em *Design* de Interiores. Universidade do Vale do Itajaí. Florianópolis.

GIL, Antônio Carlos. Métodos e técnicas de pesquisa social. 6.ed São Paulo: Atlas, 2008. XVI, 200p.

IIDA, Itiro; BUARQUE, Lia. Ergonomia: Projeto e Produção. 3. ed. rev. e ampl. São Paulo (SP): Blucher, 2016. 850 p.

KASPER, Andrea de Aguiar. Material Teórico da disciplina de Seminários de Projetos para a Construção do Caderno de Fundamentação Teórico – Metodológico em *Design* de Interiores. Curso de *Design* de Interiores da Universidade do Vale do Itajaí. Florianópolis. 2017.

KEPAH, Flor. Florianópolis, SC. 2017. Disponível em: <<https://florkepah.wordpress.com/>>Acessado em: 10 de dezembro de 2018.

KLAUMANN, Alexandre da Rocha. Moradores de rua – um enfoque histórico e socioassistencial da população em situação de rua no Brasil: A realidade do centro POP de Rio do Sul/SC. Artigo (Pós-Graduação na UNIDAVI no polo de Ituporanga/SC). Disponível em: <<http://www.uniedu.sed.sc.gov.br/wp-content/uploads/2016/02/Alexandre-da-Rocha-Klaumann.pdf>>Acessado em: 05 de setembro de 2017.

KULPA,C.C.; PINHEIRO,E.T.; SILVA,R.P. A influencia das cores na usabilidade de interfaces através do Design centrado no comportamento cultural do usuário. Artigo elaborado para 5 Eba - Encontro Brasileiro de arquitetura de informação. Universidade do Rio Grande do Sul. Disponível em: < <http://periodicos.ufpb.br/index.php/pgc/article/viewFile/10795/6086>> Acessado em: 29 de dezembro de 2018.

PACHECO JÚNIOR, Waldemar; PEREIRA, Vera Lúcia Duarte do Valle; PEREIRA FILHO, Hyppólito do Valle. Pesquisa Científica sem Tropeços: Abordagem Sistêmica. São Paulo: Atlas. 2007. 129p.

RICHARDSON, Roberto Jarry. Pesquisa Social. Métodos y *Técnicas*. São Paulo: Atlas, 2008.

SABATER, Txatxo;

SANTOS. E.T. O acolhimento como um processo de intervenção do Serviço Social junto a mulheres em situação de violência. Trabalho de Conclusão de Curso. Universidade Federal de Santa Catarina. Departamento de Serviço Social. 2006.

SANTOS, Paula; PEREIRA, Tatiana. Historiando a População em Situação de Rua. 2013.

Material elaborado para curso a distância. Disponível em:

<http://portalsocial.sedsdh.pe.gov.br/sigas/suasrh/arquivos/2013/modulo08/recife3/historiando_a_populacao_em_situacao_de_rua.pdf>Acessado em: 04 de setembro de 2017.

SILVA, Maria Lucia Lopes. Trabalho e população em situação de rua no Brasil. São Paulo, SP: Cortez, 2009.

VIDAL, Mario Cesar. Introdução à Ergonomia. Curso de Especialização em Ergonomia Contemporânea do Rio de Janeiro (Pós-Graduação Lato Sensu). Fundação COPPETEC. Grupo de Ergonomia e Novas Tecnologias. 2003. Disponível em: <<http://www.ergonomia.ufpr.br/Introducao%20a%20Ergonomia%20Vidal%20CESERG.pdf>> . Acesso em 08 de dez de 2014

