



Sick building syndrome in workers in the emergency area of a Venezuelan hospital

Síndrome del edificio enfermo en los trabajadores del área de la emergencia de un hospital venezolano

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ABSTRACT

The objective of the study was to diagnose Sick Building Syndrome (SBS) in workers in the emergency area of a Hospital de Los Valles Del Tuy in the state of Miranda. Under a quantitative paradigm, with a non-experimental, descriptive and cross-sectional design, an observation of the work process and identification of risk factors was carried out, using the Preliminary Risk Identification Sheet and PAHO Tool No. 11; for the detection of the SEE and its permanence after leaving the building, the questionnaires of the NTP-290 and 380 respectively were applied. The results show predominant symptoms such as: headache, nasal congestion, dry eyes, itchy throat and cough; the most relevant risk factors were: poor lighting (76 %), lack of cleanliness (71 %), too hot (67 %), lack of ventilation (59 %) and lack of privacy (41 %). The presence of SBS is possible, since symptoms occur ≥ 20 % in the study population during the stay at the institution and disappear when they leave the institution. It is recommended to activate a maintenance program in the ventilation system, lighting, furniture, work instruments and infrastructure in general; give continuity to this research and provide its results to the study personnel and the employer, which lead to the application of health and safety policies at work to guarantee safe and healthy working conditions for both workers and users of this service.

Keywords: Sick Building Syndrome; Risk factors; Hospitals; Worker.

RESUMEN

El objetivo fue diagnosticar el Síndrome del Edificio Enfermo en trabajadores del área de emergencia de un Hospital venezolano. Bajo un paradigma cuantitativo, con un diseño no experimental, de nivel descriptivo y corte transversal, se realizó la observación del proceso de trabajo e identificación de factores de riesgo, empleando la Ficha de Identificación preliminar de riesgos y la Herramienta N°11 de la Organización Panamericana de la Salud; para la detección del síndrome del edificio enfermo y su permanencia luego de salir del edificio se aplicaron los cuestionarios de las NTP-290 y 380 respectivamente. Los resultados muestran síntomas predominantes como: dolor de cabeza, congestión nasal, sequedad en los ojos, picor en la garganta y tos; los factores de riesgos más relevante fueron: escasa iluminación (76 %), falta de limpieza (71 %), demasiado calor (67 %), falta de ventilación (59 %) y falta de intimidad (41 %). Es posible la presencia del Síndrome del edificio enfermo, ya que los síntomas se presentan $\geq$ de un 20 % en la población en estudio durante la estadía en la institución y desaparecen cuando la abandonan. Se recomienda activar un programa de mantenimiento en el sistema de ventilación, iluminación, mobiliarios, instrumentos de trabajo e infraestructura en general; dar continuidad a esta investigación y proveer sus resultados al personal en estudio y al empleador, que conlleven a la aplicación de las políticas de seguridad y salud en el trabajo.

Palabras clave: Síndrome del Edificio Enfermo; Factores de riesgo; Hospitales; Trabajadores.

Introduction

In 1982, the World Health Organization (WHO) defined Sick Building Syndrome (SBS) as a set of discomforts and diseases caused or triggered by poor ventilation, temperature imbalance, ionic and electromagnetic charges, suspended particles, chemical gases and vapors, and bioaerosols (1), such that at least 20% of occupants may present a set of nonspecific symptoms, although the causes are not perfectly defined due to their multifactorial origin (2).

Two types of sick buildings can be distinguished: temporary sick buildings, which include new or recently remodeled buildings where symptoms decrease and disappear over time, approximately within six months, and permanent sick buildings, where symptoms persist, often for years, despite measures taken to address the problems (1). Their main characteristics are: forced ventilation, partial air recirculation, lightweight and inexpensive construction, interior surfaces mainly covered with synthetic material, airtightness, and energy-saving practices (3).

Ahora bien, una ventilación insuficiente es una de las causas a las que más frecuentemente se le atribuye el SEE, por lo que es conveniente mencionar la Norma Técnica de Prevención (NTP 972) la cual expresa que la Calidad del Aire Interior (CAI) está determinada principalmente por la presencia de gases y vapores orgánicos e inorgánicos (compuestos orgánicos volátiles (COV), ozono, monóxido de carbono, formaldehído, radón, etc.), aerosoles respirables (polvo, fibras, humos, etc.) y bioaerosoles (microorganismos y subproductos), asimismo, hay que tener en cuenta las condiciones termohigrométricas (temperatura, humedad relativa y ventilación), las corrientes de aire y el ruido molesto.(4)

Therefore, IAQ plays a very important role in these symptomatologies, because harmful agents present in the air enter the body through inhalation, primarily affecting the respiratory system, where they are absorbed and affect other organs or accumulate in different tissues; hence the importance of knowing that a worker at rest consumes between 5 and 6 L/min of air, while in more demanding activities this can reach up to 30 L/min (5). The underlying idea of this reality is that workers' health is closely linked to the physicochemical nature of the air they consume daily in their respective workplaces.

Based on the above, it is worth highlighting that people spend between 80 and 90 % of their time indoors, and VOCs are particularly relevant chemical pollutants, since they largely correspond to the bad odors perceived by occupants, creating a feeling of discomfort, (4) which causes workers to underperform in their jobs, and as previously noted, when these symptoms affect 20 % of the occupants, it is referred to as SEE.

In this sense, it is important to note that in various workplaces: schools, hospitals, libraries, industries, daycare centers, hotels, restaurants, among others, the characteristics that can promote the origin of this syndrome come together, since they carry out their activities in inadequate environments regarding their infrastructure, ventilation, indoor air quality, among other harmful conditions, which affect the health of workers.

In fact, accredited institutions such as the Occupational Safety and Health Administration (OSHA, 2010)(6) have corroborated the link between this type of building and a series of symptoms, which include: dryness and irritation of the eyes, nose, and throat; difficulty with mental concentration; headache; nausea; vertigo; cough; fatigue; suffocation; shortness of breath; itching and dryness of the skin; sensitivity to odors; muscle pain; hypersensitivity; and allergies; a situation that suggests a complex picture for the health of workers, as harmful conditions are generated that are not addressed and evaluated regularly and systematically in the field of occupational health.

It is worth mentioning that it is constantly observed in various media outlets the problems afflicting hospitals in Venezuela, where multiple factors related to the problem are observed, including the large number of people who come to be treated, which leads to saturation of the emergency service, the lack of medical equipment, the deficit of personnel (administrative, workers, and professionals), inadequate working environment conditions due to significant deterioration of the infrastructure that is without maintenance, the lack of security, and how small the institution has become for serving the inhabitants of the six municipalities of the Valles del Tuy a; causing stress to the workers of the emergency area of the hospital under study.

Therefore, the objective of this study was to: Diagnose Sick Building Syndrome in workers in the Emergency area of a Venezuelan hospital.

Materials and Methods

A field research was conducted within the quantitative paradigm, descriptive level, non-experimental and cross-sectional design. The population consisted of 46 workers from the emergency area of the hospital under study, whose sample was of a census type, being established by the workers in the following positions: nurses, physicians, orderlies, and stretcher-bearers, who worked in the three shifts of the specified area, using as inclusion criteria: job seniority of more than a month in the position and having signed the informed consent to participate in the research.

This study began with the determination of the work process through structured observation in the work areas according to the position, using a preliminary risk identification form (7) consisting of three columns: a column for the evaluation of operations, another for the characterization of the process, and a last column for the preliminary identification of risks, which in this case was omitted because it did not conform to the stated objectives. The data obtained were represented through a flow chart to graphically show the work process of the area under study.

To determine the health effects and their persistence in workers after leaving the institution, the NTP 380 questionnaire called Sick Building Syndrome: Simplified Questionnaire for its Detection (8) was used; this allowed identifying the aforementioned syndrome through individuals who answered affirmatively in both the "Presence" column and the "Improvement upon leaving the building" column, as well as the "severity" or "intensity" of the symptom/syndrome, which is assessed from the "Number of times in the last thirty days" column. This was applied together with NTP 290 and individually.(9)

Also, the general safety and hygiene conditions checklist was used (Tool 11, and its sections 11, 13, 14, 15, 17, 18 of the Manual for Managers of the Pan American Health Organization (PAHO, 2005), (10), which consists of four columns: a column describing the risks, and the other three for responses (False, True, and Not Applicable), where the worker will mark the corresponding column: True if the statement corresponds to the existing conditions, False if the statement is incorrect, and Not Applicable if the statement does not correspond to the conditions existing in their area; to evaluate the results, everything corresponding to False must be considered a potential hazard, while the statements in True and Not Applicable columns indicate absence of hazard or a properly controlled risk (10) (PAHO 2005, p.131-142). This tool identified the risk factors associated with the SEE and was applied together with the other instruments and individually.

It should be added that to determine the degree of risk for workers using Tool 11, the following scoring was used: Severity from 0 to 6, Frequency from 0 to 5, Probability from 1 to 5, as evaluated in Tool 14 (OPS, 2005) (10).

As pointed out by Berenguer et al. (1994) (3), there is a recommended protocol of action proposed by the Commission of the European Communities to study this type of problem, which consists of phases: In the first phase, an initial investigation of symptoms is carried out, gathering data on the building and its occupants, existing records, and direct inspection of the building; in the second phase, inspection and guidance measurements are taken; in the third phase, ventilation measurements, climate indicators, and other factors involved (ventilation, indoor air quality) are analyzed; and finally, in the fourth phase, medical examination and associated investigations are performed. In this research, only the first phase was completed.

A descriptive analysis of the data collected for each variable was performed using the Excel statistical software, analyzing: absolute frequency, percentages, and measures of central tendency of the study variables, range, and averages, which were expressed in text and tables.

Results

It was found that 34,8% (16 workers) are in the age group between 26-33 years, and 47,8% (22 workers) between 34-44 years, with a mean of 37,8 years, indicating that the workers predominating in this area are adults. (Table1).

The tenure of workers in the same building ranged from less than a year to 35 years, with a mean of 10,7 years. Among them, 32,6% (15 workers) had less than a year of tenure, 23,9% (11 workers) had 1 to 5 years, and 26% had 6 to 11 years (Table 1). The low average tenure and high average age of workers are noteworthy. Regarding tenure in the same location, 34,7% (16 workers) had less than 1 year, and 32,6% (15 workers) had between 1 and 6 years.

Table 1. Socio-demographic characteristics of emergency area workers. Venezuelan hospital. 2024.

Age group	Frequency	Percentage (%)
23-33	16	34,8
34-44	22	47,8
45-53	4	8,7
54-64	4	8,7
Range (R) = 23-64 years $\bar{x}$ = 37.8 years		
Seniority of workers in the building (years)	Frequency	Percentage (%)
<1	15	32,6
1 to 5	11	23,3
6 to 11	12	26,3
12 to 17	2	4,3
18 to 23	2	4,3
24	2	4,3
30 to 35	2	4,3
Range (R) = < 1 year to 35 years average = 10.7 years		
Workers' tenure at the same workplace (years)	Frequency	Percentage (%)
< 1	16	34,7
1 to 6	15	32,6
7 to 12	7	15,3
13 to 18	4	8,7
19 to 24	3	6,5
25 to 30	1	2,2
Range (R) = < 1 year to 30 years average = 10.7 years N = 46		

Likewise, female workers predominated, constituting 79.55% (36 workers) of the sample. This is typically observed in such workplaces due to the Sexual Division of Labor, which is a cultural construction that assigns social roles differentiated by sex: men are mostly assigned to productive tasks, while women are relegated to social reproduction activities, primarily domestic work (11). In other activities, such as in the health sector, women tend to be incorporated because these roles bear similarity to household activities, specifically those related to the care of others.

As for the occupations of the workers who participated in the study, nursing staff predominated at 69.56% (32 workers), followed by medical staff at 15.21% (7 workers), housekeeping staff at 8.69% (4 workers), and orderlies at 6.52% (3 workers).

Description of the Workflow in the Emergency Department

The citizen requiring medical attention is received, referred from the outpatient clinics of the hospital and from other healthcare centers in the six municipalities of the Valles del Tuy, brought by fire department or civil defense ambulances, or arriving by their own means (public transport, car, or motorcycle). The reasons may be accidents of various types or some pathology. They enter the emergency area and receive medical attention (triage).

If it is a priority, the patient is admitted to medical care and, depending on the pathology, is referred to the required service (trauma shock, surgery, traumatology, delivery room, pediatric emergency). Then, admission is carried out, where the patient is registered and hospitalized to receive therapy. If the patient evolves satisfactorily, they are discharged, and the citizen is considered attended. If not discharged, the patient is referred to another specialized healthcare center; for this purpose, a bed and an ambulance are arranged for transfer. Otherwise, if the patient has died, the family is notified and guided, the death certificate is filled out, and then the body is delivered (see Figure 1).

Likewise, if it is not a priority, the patient enters the waiting room and then receives medical attention.

If medical treatment is required, the patient goes to the injection room for administration of the treatment, is then re-evaluated by the physician, is discharged, and the citizen is attended (See Figure 1).

Regarding the organization of work, the work schedule is from 7am to 1pm, 1pm to 7am, and 7pm to 7am for nursing staff, stretcher-bearers, and housekeeping staff; medical staff work rotating 24-hour shifts, and in each emergency area, two nurses work per shift at the time of the research, while the medical staff work eight hours daily.

Figure 1. Flowchart of the work process in the emergency area.

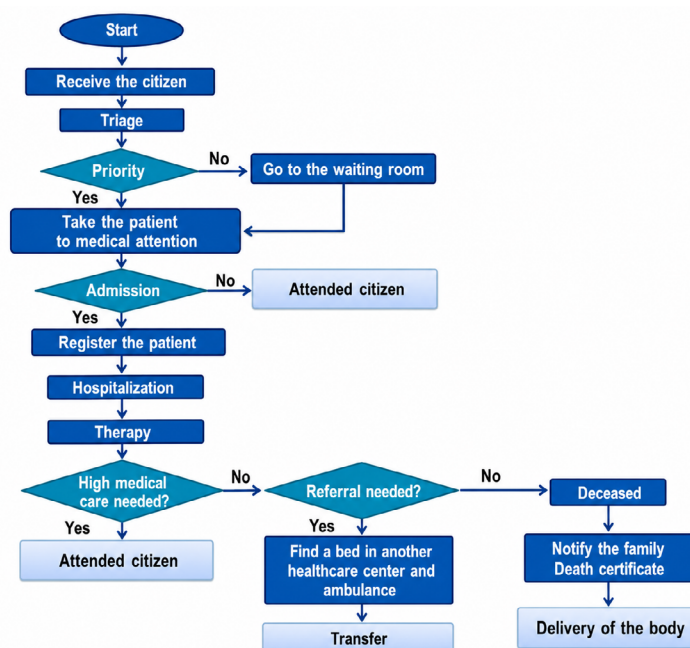


Table 2. Working environment conditions in the emergency area. N=46

Item	Frequency	Percentage (%)
Do you work in an area:		
Office closed	3	7
In an enclosure separated by partitions	4	9
In an open area with other people	39	85
Do you sit less than 5 m from the window?		
Yes	24	52
No	22	48
The window(s) can be opened.		
Yes	24	52
No	20	44
Did not answer	02	4
Within an approximate radius of 10 m from your workstation, is there any:		
Typewriter	11	24
Photocopier	3	7
Sort screen	3	7
Printer	6	13
Teletype or Fax	0	0
Franchisor	0	0
Other (specify): Monitors	13	28
No answer	10	22

Regarding whether the staff is satisfied with their usual schedule, 72% responded yes; likewise, regarding whether the number of breaks during the workday is sufficient, 61% responded yes. On the other hand, workers state that they sometimes have to participate in decisions that affect them, with 63% agreeing, and they reported that the relationship among colleagues is good at 78%. Finally, 57% of workers state that the training they receive at the institution is sufficient to perform their work.

Similarly, the survey showed that 76% of the studied population has a permanent continuous employment contract, 61% of whom consider their job important; 70% of workers report that the institution fully offers them the opportunity to apply their knowledge. Regarding obstacles among workers, 78% say there are none, and finally, 61% state that they consider the supervision of work by management to be adequate. (Table 5).

The most frequent symptoms were throat itching (45%), fatigue and nasal congestion (39%), which were the highest relative to the others.

Table 4 summarizes the symptoms.

Table 4 also shows that of the nine symptoms surveyed, 20% were present. If the diagnosis is made when at least one of them exceeds this percentage, it is clear that Sick Building Syndrome is possibly present in the emergency department of the hospital under study.

Furthermore, using the questionnaire from “NTP 380-Sick Building Syndrome: Simplified Questionnaire for its Detection” (8), it was possible to verify whether these symptoms persisted in workers after leaving the institution and to assess their intensity. The results are shown in Table 5.

In Table 5, the most notable results were: itching/burning in the throat (50% of workers, all reporting improvement upon leaving, intensity 18, occurring ≥ 2 times per month); dry eyes (39%, improvement in 37% upon leaving, intensity 15); stuffy nose (37%, improvement in 30% upon leaving, intensity 11); and headache (26%, improvement in 54% upon leaving, intensity 24).

Table 3. Risk factors identified in the emergency area. N=46

Factor	Frequency	Percentage (%)
Noise		
Conversation	21	46
Street/outside	15	33
Ventilation system	14	30
Ventilation		
Lack of ventilation/air stagnation	24	52
Drafts	14	30
Temperature/Humidity (produce)		
Too hot	27	59
Excessive humidity	17	37
Odors		
Body	31	67
Food	12	26
Tobacco smoke	11	24
Lighting		
Scarce lighting	35	76
Light flickering	7	15
Bothers in work area		
Lack of cleanliness	33	71
Compartmentalization	10	22
Decoration	6	13
Others / affect		
Lack of intimacy	19	41
Isolation	13	28
View	12	26
Disturbances/distractions	11	24
Feelings of confinement	7	15

Then, the degree of risk was determined using tool No. 11 of the Manual for Managers and Administrators of the Health Sector of the PAHO (2005); through the surveys conducted, it was found that there is a moderate danger in relation to chemical, physical, biological, and ergonomic risk factors, with false responses predominating over true and not applicable responses.

Regarding the identification of risk factors corresponding to the fourth objective of the research, it was found that 85% of the surveyed workers agree that they work in an open area with other people; similarly, 52% indicate that they sit 5 m from a window and that it can be opened; on the other hand, 24% state that within a radius of 10 m there is a typewriter and 28% that there are monitors (Table 3). This aspect is important to identify since the conditions of the work environment greatly influence the presence of SEE, related to indoor air quality, and aggravate the effects of physical and biological risks. (10)

Similarly, the conditions of the hospital infrastructure are among the problems that most affect this healthcare center, probably due to the deficient maintenance of the facilities, which has caused a collapse in many of its structures, such as broken pipes, congestion of the sewage drainage system, improperly placed or missing ceiling tiles (adult and pediatric observation areas), contamination due to the transfer of corpses or pathological waste through the corridors to the morgue, since the morgue is located near the adult hospitalization area; in addition, black mold and dampness are observed on the walls of the corridors and on the grilles of the air conditioning systems in all areas under study, which could be related to sick building syndrome.

In Table 3, the risk factors were tabulated with their frequency and percentages.

In Table 3, the most notable aspects are: inadequate lighting, since 76% report that it is insufficient; followed by lack of cleanliness in 71%; 67% perceive unpleasant body odors; accompanied by 59% who express excessive heat (temperature and humidity); and 52% who state that there is a lack of ventilation or stagnant air.

Table 4. Summary of the most frequent symptoms among emergency area workers. N=46

Symptoms	Frequency	Percentage (%)
Eyepieces		
Dryness	13	21
Blurred Vision	13	21
Nasal		
Nasal Congestion	23	39
Throat		
Dryness	11	20
Itching	25	45
Respiratory Disorders		
Cough	19	34
Oral		
Dryness/Thirst	19	37
Pain		
Back	25	34
Muscular	23	32
Joints	16	22
Flu-like		
Fever	14	23
Chills	13	21
Weakness	25	25
Tension		
Exhaustion	26	39
General disorders		
Headache	19	26

Regarding work organization, they state that there is a high level of attention to perform their work at 57%, likewise they report that in the last three months the amount of work has been sufficient at 57%, the pace of work in the emergency is determined by external causes (public and clients) at 50%, similarly 52% report that the pace of work forces them to work too quickly (Table 5).

The surveyed staff indicate that the phrase that best reflects what they do in their job is “the work is varied” with 52%, and 63% of emergency workers state that when a mistake is made in their job, it can have serious consequences for the development of the work or on 1 person.

Table 5. Health effects and their duration in workers of the Emergency Area. N=46

Symptoms	Frequency		Percentage (%)		Improvement				Number of times per month	
	Yes	No	Yes	No	Yes	No	Yes	No	≤ 2	≥ 2
Eyes	38	8	83	18	34	4	74	9	5	22
Dryness	18	7	39	15	17	1	37	2	3	15
Stinging/Itching	8	0	17	0	8	0	17	0	1	7
Tearing	12	1	26	2	12	0	26	0	1	11
Nose	26	20	57	43	23	3	50	7	7	21
Nasal congestion	17	10	37	22	14	3	30	7	6	11
Dryness	9	10	20	22	9	0	20	0	1	10
Throat	39	7	85	15	32	7	70	15	9	30
Dryness	16	7	35	7	9	7	20	15	4	12
Itching/Burning	23	0	50	0	23	0	50	0	5	18
General	42	4	91	9	39	3	85	7	5	37
Headache	26	4	57	11	25	1	54	2	2	24
Weakness	12	0	26	0	10	2	22	5	3	9
Lethargy	4	0	9	0	4	0	9	0	0	4

These results indicate that there is high danger in the area, but when compared with the scores given in the manual, it is a moderate risk, which requires palliative action as soon as possible; warnings, personal protective equipment, and notices can serve as acceptable internal measures.

Table 6. Risk factors (risk level) in the emergency area.

Factors	True	False	Not applicable
Chemicals	45	145	53
Physicists	161	534	212
Biologics	85	232	46
Ergonomic	110	324	80

DISCUSSION

From a socio-demographic point of view, the study group is characterized by a predominance of females at 79.5%, which coincides with the research conducted by Lizcano et al. (2017), (12) Peña (2016), (13) Castillo & Obregón (2014) (14) and Martínez et al (2014), (15) since the health sector is a major source of employment that groups together an estimated more than 20 million workers in Latin America and the Caribbean, where the majority are women, (10) as a result of the Sexual Division of Labor. (11) Likewise, it was evidenced that their ages are mainly between 34-44 years old at 47.8% across the three shifts, being a population of young and older adults, which coincides with the results obtained in the study conducted by Castillo & Obregón (2014). (14)

Now, regarding the job seniority of emergency personnel, where a high percentage is observed in the range of less than 1 year at 32.6% and 1-5 years at 23.9%, this shows that the working population is relatively new, indicating a high turnover rate, finding a difference with respect to the research conducted by Lizcano et al, (2017) (12) where the seniority of workers is greater than 20 years in the same position.

On the other hand, regarding social security, this research predominantly found permanent employment at 76%, unlike the study by Peña (2016) (13) where there was 47.6% temporary substitutes, probably because Peña's work was conducted in an outpatient clinic, while this research was carried out in a Type II hospital, which receives more budget, increasing the possibility of making permanent contracts.

Similarly, the instruments or work tools inform us about the physical effort required to perform the work, the risk involved in the interaction between the worker, the instrument, and the object, and the degree of control the worker can exert over the instrument (Laurell, 1978); (16) in relation to this point, the work instruments in the emergency area for attending to and transporting patients are obsolete, neglected, dirty, deteriorated, there are no disposable sheets to cover them, generating stress and exhaustion in 39% of the staff in the study area.

Similarly, regarding the study conducted by Hernández & Landaeta (2007) (17) in Venezuela, who used the same methodology established in NTP 290, but developing all phases of the research, diagnosed the SEE finding similarity with respect to the most frequently found risk factors that directly affect workers' health such as: lack of ventilation 81.65%, excessive heat 71.54%, conversation related to noise 62.54%, poor lighting 55.81%, body odors 32.96%; which coincide with this research (lack of ventilation 52%, excessive heat 59%, conversations related to noise 46%, body odors 67%, poor lighting 76%). Similarity also observed with respect to an incidence of symptoms: headache at 47.63%, repeated sneezing at 42.32%, cough 30.71% and nasal congestion 30.71%; which coincide with those of this research (headache 26%, nasal congestion 39% and cough 34%).

However, unlike Hernández & Landaeta (2007) (17), a higher percentage was found for sore throat (45%) and exhaustion (39%), which could be related to the area where the two studies were conducted, because this study was conducted in the emergency area of a public hospital and the other in administrative offices and corridors of a higher education institution.

Furthermore, another study conducted by Castillo & Obregón (2014) [14], who used a modified version of NTP 290, identified the following symptoms: blurred vision 20%, nasal congestion 45%, exhaustion 34%, and headache 37%, which coincide with those found in this research (blurred vision 21%, nasal congestion 39%, exhaustion 39%, and headache 26%). However, regarding risk factors, the results do not coincide with this study: in relation to perceived odors, their study showed that odors were not perceived in 47% and that lighting was adequate in 94%, contrary to this study where results show 76% poor lighting and 71% perception of body odors, perhaps, as previously stated, due to the difference in workplace.

As for work organization, the research conducted by Castillo & Obregón (2014) (14) showed that the level of attention required to perform their work is high 62%, work is supervised 62%, they almost always do the same thing with slight variation 47%, the work pace forces you to work toward a target that must be achieved 40%, any error can cause harm to third parties 98%. Although it was carried out in different work environments, it is related to this work regarding the level of attention required to perform the work, which is high 57%, and any error can cause harm to third parties 63%, but it differs regarding the work pace since it forces working too fast in 52%; these results indicate a high demand in the psychosocial sphere.

Regarding symptoms, this study showed the highest percentages in: dry eyes (39%), which improves upon leaving the building in 37%, stuffy nose in 37% and improves upon leaving the building in 30%, itching/irritation (throat) in 50%, improves upon leaving the building in 50%, headache (general) in 57% and improves upon leaving the building in 54%, all with high intensity. These results coincide with the study by Cornejo & Escobar (2019) (18) since the symptoms with the highest percentages were dry eyes in 73,85%, itching/stinging in 56,92%, nasal congestion in 52, 30%, dry throat in 58,46, and itching in the throat in 53,85%; regarding general symptoms, headache in 64,62% and lethargy in 58,56%. All improve upon leaving the workplace but have different intensities, the highest intensity being itching/stinging in the eyes in 94,59%, weakness in 87,50%, dry throat in 86,84%, nasal congestion in 85,29%, and itching/irritation in the throat in 82,86%.

Finally, the degree of risk of that area was measured using Tool No. 11 (OPS, 2005), yielding a predominance of false responses regarding physical risk factors out of a total of 534, which corroborates that the most prominent risk is physical, as already indicated by NTP 290, and indicates that this study population is at moderate risk.

CONCLUSIONS

The study findings allow us to conclude that there is a prevalence of symptoms compatible with Sick Building Syndrome (SBS) among the staff of the emergency department of the evaluated hospital. This condition appears to be directly associated with environmental and ergonomic risk factors identified in the workplace, among which critical deficiencies in lighting, hygiene, air quality, and thermal comfort are particularly significant.

It was also verified that the obsolescence and lack of maintenance of equipment and infrastructure contribute to workload and staff exhaustion, aggravating the situation. The conjunction of these elements constitutes a moderate risk to the health and well-being of workers, which in turn may compromise the quality of care provided to patients.

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CONFLICT OF INTEREST

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