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ORIGINAL RESEARCH

Workplace barrier's questionnaire: creation and reliability analysis

Questionário de avaliação de barreiras no ambiente de trabalho: elaboração e análise da confiabilidade

Cuestionario para evaluar las barreras en el entorno laboral: desarrollo y análisis de fiabilidad

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ABSTRACT | Workers' functioning is related to the environmental conditions that influence their activities, favoring or hindering their fulfilment. The Work Rehabilitation Questionnaire (WORQ) was based on a core set of the Classification of Functioning (ICF) to assess workers. It has a validated Portuguese version for use with active Brazilian workers but it only assesses function body limitations, activities, and participation. This study developed a questionnaire to assess environmental barriers at work following the WORQ format and tested its reliability. This study reached a consensus (10 professionals and 11 workers) to choose environmental categories in the CIF core set that originated the WORQ to be integrated into the questionnaire. This research selected elements if at least 85% of participants reported it. Categories were transformed into questions. For reliability analysis, the questionnaire was applied to a random sample of 123 active workers at a public university in Brazil. The questionnaire had 20 questions based on the ICF core set for vocational rehabilitation and WORQ. This study evaluated its reliability, finding an r=0.855 (test-retest) and Cronbach's alpha=0.936 (internal consistency). This study developed an ICF-based questionnaire to assess environmental barriers in the workplace. The analysis of psychometric characteristics showed strong test-retest reliability and the internal consistency of the instrument.

Keywords | Work Environment; Disabilities; International Classification of Functioning; Occupational Health.

RESUMO | A funcionalidade do trabalhador está relacionada às condições ambientais que influenciam suas atividades, favorecendo ou prejudicando a realização delas. O Questionário de Reabilitação Profissional (WORQ) foi baseado em um *core set* da Classificação de Funcionalidade (CIF) para avaliar trabalhadores, ele apresenta versão em português validada para uso com trabalhadores brasileiros ativos, porém, se restringe à avaliação de limitações em funções corporais, atividades e participação. Este estudo teve como objetivo elaborar um questionário de avaliação de barreiras ambientais no trabalho, seguindo o formato do WORQ, e testar sua confiabilidade. A escolha das categorias ambientais – constantes no *core set* da CIF que originou o WORQ – para integrar o questionário foi realizada em consenso (10 profissionais e 11 trabalhadores). Foram selecionadas aquelas apontadas por pelo menos 85% dos participantes e, dessa forma, transformadas em questões. Para análise da confiabilidade, o questionário foi aplicado em uma amostra aleatória de 123 trabalhadores ativos de uma universidade pública do Brasil. O questionário elaborado teve o total de 20 questões. A sua confiabilidade foi avaliada com r=0,855 (teste-reteste) e alfa de Cronbach=0,936 (consistência interna). Este estudo elaborou um questionário baseado na CIF para avaliar barreiras ambientais nos locais de trabalho, que, por meio da análise das características psicométricas, apontou forte confiabilidade teste-reteste e consistência interna para o instrumento.

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Descritores | Ambiente de Trabalho; Incapacidades; Classificação Internacional de Funcionalidade; Saúde Ocupacional.

RESUMEN | La funcionalidad del trabajador está relacionada con las condiciones ambientales que influyen en sus actividades, favoreciendo o dificultando su desempeño. El Cuestionario de Rehabilitación Profesional (WORQ) se basa en un *core set* de la Clasificación de Funcionalidad (CIF) para evaluar a los trabajadores y cuenta con una versión en portugués validada para aplicar a trabajadores brasileños en actividad; sin embargo, esta herramienta está circunscrita a evaluar solo las limitaciones en las funciones corporales, las actividades y la participación. Este estudio tuvo por objetivo desarrollar un cuestionario, con base en el formato del WORQ, para evaluar las barreras en el entorno laboral y comprobar su fiabilidad. La elección de las categorías ambientales que serán incluidas en el cuestionario –y que constan en el *core set* de la CIF que dio origen al WORQ– se realizó por consenso (10 profesionales y 11 trabajadores). Se seleccionaron las categorías elegidas por aproximadamente el 85% de los participantes para convertirlas en preguntas. Para evaluar la fiabilidad, el cuestionario se aplicó a una muestra aleatoria de 123 trabajadores en actividad de una universidad pública de Brasil. El cuestionario constaba de un total de 20 preguntas. Su fiabilidad se evaluó con r=0,855 (test-retest) y alfa de Cronbach=0,936 (consistencia interna). Este estudio desarrolló un cuestionario basado en la CIF para evaluar las barreras ambientales en el entorno laboral que, mediante el análisis de las características psicométricas, indicó una fuerte fiabilidad test-retest y consistencia interna de esta herramienta.

Palabras Clave | Entorno laboral; Incapacidades; Clasificación Internacional del Funcionamiento; Salud ocupacional.

INTRODUCTION

Changes to epidemiological patterns due to population aging has entailed the better understanding of human functioning and its various aspects. In 2001, the World Health Organization endorsed the International Classification of Functioning, Disability and Health (ICF) as a conceptual model that defines functioning as all persons can do on their own and as part of society under the influence of their interaction with the environment[1].

Based on this perspective, researchers have used the ICF to study workers' functioning. Switzerland created a core set and later the Work Rehabilitation Questionnaire (WORQ), which is free to use and lists the main aspects of workers' functioning[2-3]. It can be accessed at www.mywork.org and has been validated for Brazilian Portuguese[4].

Due to its comprehensiveness, a recent study carried out in Brazil validated the self-reported version of the WORQ for active workers to suggest its use in the early identification of disabilities in workers of large public education institutions, including it in periodic health follow-ups[5,6].

The presence of only two environmental aspects (family and management support) on the WORQ and the common difficulties related to these factors workers in Brazil face[7,8] entailed the development of a questionnaire that could complement the assessment of workers' functioning, specifically one focused on finding these barriers.

Environmental factors play a major role in generating work disabilities, including ergonomic, organizational, and relationship aspects at work[9-11]. Changes to the environment are considered predictors of return to work, directly influencing the permanence or risk of a new absence[8].

Thus, this study aimed to develop a questionnaire to identify environmental barriers in the workplace to complement the use of WORQ in Brazil. After elaborating, this study applied the instrument, analyzed its reliability, and verified the correlations between functioning problems in the chosen population and the barriers according to the questionnaire.

METHODOLOGY

A questionnaire to evaluate environmental barriers at work was evaluated and its reliability, analyzed.

The development of the Environmental Barriers Questionnaire (QABT) followed the model used in the elaboration of WORQ[3] and was initially constituted by a consensus to choose environmental categories based on the ICF core set for vocational rehabilitation, which should be included in it (Figure 1).

The ICF core set for vocational rehabilitation is considered a reference standard to assess and describe the relevant factors of workers' functioning – regardless of their health status – and can be used by healthcare providers, occupational professionals, and managers.

The core set consists of 33 categories related to the identification of environmental barriers at work, which based the elaboration of the QABT.

For this stage, a working group was created to which 21 members were invited. Overall, five healthcare providers who were ICF scholars and were identified by a search of their curricula and publications; six healthcare providers who worked in the forensic and occupational health unit of Universidade Federal do Acre; and 10 workers of any function in the same institution were invited to analyze the questionnaire from workers' point of view.

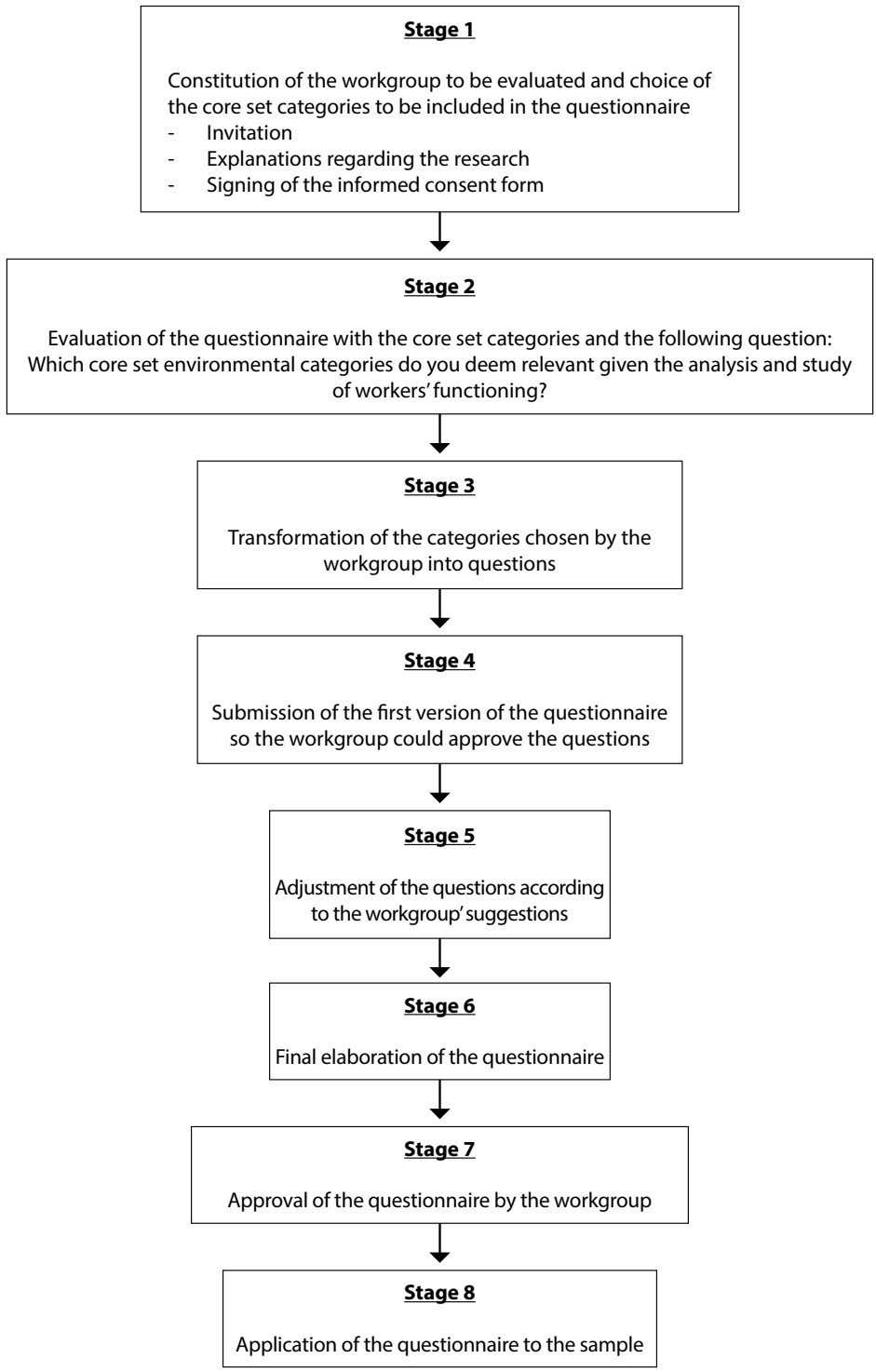

Figure 1. Flowchart for the elaboration of the Environmental Barriers Questionnaire (QABT) elaborated by this study. Rio Branco, Acre, 2019.

Participants included a nurse, a nutritionist, three psychologists, two social workers, a physician, and three physical therapists. The professionals working in the occupational health sector averaged eight years of experience in the area. Among workers, invitations were sent to 15 possible participants chosen by a draw, of which 10 responsed positively. Participants were contacted by an email that explained the research and invited them to participate. After answering positively, they received an electronic form containing the categories and instructions for filling them out.

The questionnaires were prepared using Google Form – one for professionals and another for workers – and included an initial explanation that defined the environmental barriers standardized by the ICF and listed the 33 categories of environmental factors in the vocational rehabilitation core set. Then, each member of this work group should choose those they considered essential analyze environmental factors that may constitute barriers to workers' functioning, contributing to the emergence of disabilities. The categories that were identified as essential by at least 85% of participants were chosen to constitute the QABT.

After analyzing the answers, 20 core set categories were gathered: e1101, e115, e120, e125, e130, e 135, e150, e225, e240, e250, e260, e330, e355, e430, e450, e460, e465, e540, e570, and e580. Then, questions were built for each selected category following the WORQ format, which has one question for each ICF item and offers a scale from 0 to 10 as an answer, with workers indicating a number from 0 – no problem – to 10 – a complete problem in that item (Figure 2).

e1101 Drugs
e115 Products and technology for personal use in daily living
e120 Products and technology for personal indoor and outdoor mobility and transportation
e125 Products for communication
e130 Products and technology for education
e135 Products and technology for employment
e150 Design, construction and building products and technology of buildings for public use
e155 Products and technology of design, building and construction of buildings for private use
e225 Climate
e240 Light
e250 Sound
e260 Air quality
e310 Immediate family
e320 Friends
e325 Acquaintances, peers, colleagues, neighbors, and community members
e330 People in positions of authority
e340 Personal care providers and personal assistants
e355 Health professionals
e360 Health-related professionals
e430 Individual attitudes of people in positions of authority
e450 Individual attitudes of health professionals
e460 Societal attitudes
e465 Social norms, practices and ideologies
e525 Housing services, systems and policies
e530 Utilities services, systems and policies
e540 Transportation services, systems and policies
e550 Legal services, systems and policies
e555 Associations and organizational services, systems and policies
e565 Economic services, systems and policies
e570 Social security services, systems and policies
e580 Health services, systems and policies
e585 Education and training services, systems and policies
e590 Labour and employment services, systems and policies

Figure 2. Categories of environmental factors (n=33) in the ICF Core Set for Vocational Rehabilitation. In bold, categories selected to constitute the Environmental Barriers Questionnaire (QABT) elaborated by this study. Rio Branco, Acre, 2019.

After the sentences related to the QABT questions were drafted, the form was sent to the working group until it was approved by participants.

Due to the generic characteristics of the core set and the validation of the WORQ for use in active workers, the QABT was designed to be applied to workers regardless of the presence or absence of diseases or disabilities. The proposal consists of using it as a complement to WORQ in the early identification of disabilities and barriers that may compromise the functioning of active workers in public educational institutions and control or eliminate them, favoring the health of workers over time. Workers join these institutions by public examinations and remain in them for a long time. Moreover, these institutions already perform periodic health monitoring, which can be complemented with the functioning assessment questions made possible by the use of WORQ and QABT.

To analyze its reliability, the questionnaire was applied to a random sample of active workers in the technical, administrative, or teaching areas of the university. The WORQ was also applied at the same time to verify correlations between disabilities and environmental barriers. Hypotheses were raised to be verified with the correlation of the instruments, namely:

- Workers who have high disability scores (obtained by applying the WORQ) are subject to barriers in their work environment (to be identified by the QABT);
- Workers with high values of emotional- and cognitive-related disability are subject to organizational- and support-related barriers in their work environment (to be identified by the QABT);
- The lower the occurrence of any environmental barrier, the better workers' performance and overall health status.

Participants were chosen by a draw that included the total number of active workers in the institution, which, at the time of this research, totaled 1458 employees. The inclusion criterion for this study referred to active employment in the institution. Exclusion criteria included being away from duty for more than six months and neither completely filing out nor delivering the complete data collection form after three search attempts by the researcher. Data were collected from March 2018 to February 2019.

The literature is quite variable regarding sample size. Some authors consider a sample to be adequate in the case of more than five participants per questionnaire item[12,13], whereas others consider samples with 100 participants sufficient for reliability studies[14]. This study considered six participants per questionnaire item, resulting in 120 participants. To make up for possible losses, an increase of 20% was considered, totaling 144 participants to be drawn.

Participants were contacted at their workplace, where they answered the questionnaire, which was collected at the time of application or the next day.

WORQ and environmental barriers questionnaire scores were calculated by the sum of the values indicated for each item. They were calculated for the total sample, gender, type of work, and limitation at the time of research. The following subscores were calculated for the WORQ in addition to the global score: emotion (items 4, 5, 6, 7, 8, 23), cognition (items 3, 9, 10, 17, 18, 19, 20, 24, 25, 26), dexterity (items 14, 15, 21, 22, 27, 28, 29, 34, 35, 36), and mobility (items 12, 30, 31, 32)[15,16].

Reliability was evaluated by test-retest and internal consistency analysis. Overall, 20 participants answered the test-retest questionnaire in two moments 14 days apart[17,18]. Spearman's correlation coefficient[19] was used to verify agreement between answers. Internal consistency was established by Cronbach's alpha coefficient[20]. Data were analyzed using the Statistical Package for the Social Sciences, version 20.

The study was approved by the Research Ethics Committee at Universidade Federal do Acre and all participants signed informed consent forms.

RESULTS

This study elaborated a questionnaire with 20 items (Figure 3).

Of the total sample, 123 participants met the inclusion criteria and answered the questionnaires.

Tables 1 and 2 show the descriptive characteristics and scores found after the application of the questionnaires in the studied sample.

The analysis of the relationship between environmental barriers indicated by participants and the occurrence of disabilities at work (WORQ) found a positive correlation between questionnaires (r=0.446). Table 3 shows this and the other correlations.

This study confirmed the reliability of the Environmental Barriers Questionnaire, which showed excellent internal consistency (Cronbach's alpha=0.936) and a strong correlation between its first and second application (Spearman=0.855).

At work, the environment (physical, social, and attitudinal) can act as a facilitator of workers' functionality (when it favors good performance) or it can act as a barrier (when it disfavors productivity or causes health problems).

Please rate how much your work environment interferes with your functionality, indicating from 0 = causes no problem to 10 = causes a complete problem.

. Mark an X in the place corresponding to the number that best reflects your situation. The greater the extent of the problem, the higher the number you should tick; the smaller the extent of the problem, the lower the number you should check.

. Please answer all questions accurately and as completely as possible even if you feel that the environmental issue is irrelevant.

. Be sure that your answer refers to your functional ability or your ability to perform a task at work considering the influence of environmental factors as you work.

To what extent have you been having trouble doing your current job...

1. ... due to the use or non-use of medications (side effects, difficulties with use, access to certain medications, and/or others)?
2. ... related to the availability of equipment and technologies that can be used to promote functionality, including those adapted or specially designed for you, such as work tools, orthosis to stabilize your wrists as you type, and/or others?
3. ... related to the availability of products and technologies designed to facilitate mobility and personal transportation in indoor and outdoor work environments, e.g., availability of car, wheelchair, and/or others?
4. ... related to the availability of products and technologies for communication at work, such as the existence of telephones, televisions, hearing aids or any device that promotes the sending and receiving of information?
5. ... related to the availability of resources in education, such as learning methods, training, the presence of manuals, books, or technologies aimed at acquiring knowledge for your work?
6. ... related to the availability of products and technologies that facilitate your professional activities, such as office equipment, adjustable desks, scanners and/or others)?
7. ... related to the availability of building and architectural resources and technologies, e.g., ramps, elevators, automatic doors, and/or others?
8. ... related to the climate (humidity and temperature) in your work environment?
9. ... related to lighting in your work environment?
10. .... related to the quality of sound (noise) in your work environment?
11. ... related to air quality (pollution, smoke, and/or others) in your work environment?
12. ... related to the support you receive from individuals who provide the services necessary to support you in maintaining your work performance, such as transportation assistants, administrative assistants, and/or others?
13. ... related to the support you receive from professionals (physicians, psychologists, physical therapists, social workers, and/or others) that contributes to the maintenance of your performance?
14. ... arising from the attitudes of your boss, coordinator, or any person in a position of authority arising from opinions about you or about some other aspect (prejudice, marginalization, harassment,and/or others) which interferes in your performance at work?
15. ... arising from the attitudes and beliefs, in general, held by groups of people in society or a culture, arising from opinions about you,or some other aspect that interfere with your performance at work?
16. ... caused by customs, practices, rules,and/or social norms (morals, etiquette, religious behavior, and/or others)?
17. ... caused by transport policies and services?
18. ... caused by social security services such as economic support for health conditions, unemployment insurance, and/or others?
19. ... caused by health services such as rehabilitation, medical treatment,and/or others?
20. ... caused by education services, such as the provision of specializations, vocational training,and/or others?

Response scale for each item:

(No problem) 0 1 2 3 4 5 6 7 8 9 10 **(Complete problem)**

Figure 3. Environmental Barriers Questionnaire (QABT) applied to the studied sample. Rio Branco, Acre, 2019.

Table 1. Descriptive characteristics of the sample of this study conducted in Rio Branco, Acre, 2019.

Characteristic	Total Sample n = 123	Women n=67 (54.5%)	Men n=56 (45.5%)	p-value	Professors n=70 (56.9%)	Technicians n=53 (43.1%)	p-value
Average age (years)	42.71 (10.49 SD)	39.72 (9.06 SD)	44.84 (11.80 SD)	0.024	41.97 (10.07 SD)	42.15 (11.50 SD)	0.759
Categorized age							
Up to 24 years [OR = 2.28]	1 (0.8%)	1 (1.5%)	0	0.012	1 (1.4%)	0	0.806
24 to 44 years old (young adults)	81 (65.9%)	52 (77.6%)	29 (51.8%)		47 (67.1%)	34 (64.2%)	
45 to 59 years old (adults)	30 (24.4%)	11 (16.4%)	19 (33.9%)		16 (22.9%)	14 (26.4%)	
60 years or older (older adults)	11 (8.9%)	3 (4.5%)	8 (14.3%)		6 (8.6%)	5 (9.4)	
Marital status							
Single	11 (8.9%)	8 (11.9%)	3 (5.4%)	0.160	8 (11.4%)	3 (5.7%)	0.237
Married/Cohabiting	91 (74%)	45 (67.2%)	46 (82.1%)		53 (75.7%)	38 (71.7%)	
Separated/Divorced	21 (17.1%)	14 (20.9)	7 (12.5%)		9 (12.9%)	12 (22.6%)	
Schooling							
Graduate	105 (85.4%)	58 (86.6%)	47 (83.9%)	0.680	67 (95.7%)	38 (71.7%)	0.001
Undergraduate	18 (14.6%)	9 (13.4%)	9 (16.1%)		3 (4.3%)	15 (28.3%)	
Work routine							
Full-time	65 (52.8%)	35 (52.2%)	30 (53.6%)	0.931	44 (62.9%)	21 (39.6%)	0.001
Flexible schedule	32 (26%)	17 (25.4%)	15 (26.8%)		24 (34.3%)	8 (15.1%)	
Part time	26 (21.1%)	15 (22.4%)	11 (19.6%)		2 (2.9%)	24 (45.3%)	
Limitations							
Yes	19 (15.7%)	10 (15.2%)	9 (16.4%)	0.964	8 (11.6%)	11 (21.2%)	0.331
No	98 (81%)	54 (81.8%)	44 (80%)		59 (85.5%)	39 (75.0%)	
Not applicable	6 (3.3%)	2 (3%)	2 (3.6%)		2 (2.9%)	2 (3.8%)	

* P-value≤0.05 indicates statistical differences between groups (Student's t-test). The chi-square test analyzed categorical variables and the Mann-Whitney test, the difference between the means of continuous variables.

** The differences in relation to the total stem from lack of information regarding the variable.

Table 2. Overall scores and sub-scores obtained with the WORQ and general score of the environmental barriers questionnaire (QABT) for the whole sample and by categories. Rio Branco, Acre, 2019.

Questionnaires	Scores											
	General WORQ	p-value	Emotion Subscore	p-value	Cognition Subscore	p-value	Mobility Subscore	p-value	Dexterity Subscore	p-value	Environmental barriers	p-value
Total Sample n=123	102.65(66.46)		20.39 (13.63)		25.23 (17.73)		8.89 (9.54)		23.17 (19.41)		34.60 (30.96)	
Women n=67 (54.5%)	114.96(64.8)		23.91 (13.51)		28.19 (18.00)		9.79 (9.82)		25.76 (19.23)		38.78 (31.87)	
Men n=56 (45.5%)	88.36(66.06)	0.012	16.18 (12.64)	0.001	21.68 (16.89)	0.023	7.80 (9.15)	0.298	20.07 (19.34)	0.052	29.61 (29.32)	0.066
Professors n=70 (56.9%)	104.67(63.48)		21.11 (12.80		25.40 (17.66)		8.91 (9.10)		22.91 (17.59)		30.26 (26.86)	
Technicians n=53 (43.1%)	100.43(70.75)	0.560	16.43 (14.72)	0.304	25.00 (18.00)	0.801	8.85 (10.18)	0.679	23.51 (21.75)	0.618	40.34 (35.10)	0.221
Referred to limitation** n=19 (15.4%)	176.37(65.69)		28.26 (15.07)		36.26 (21.05)		21.21 (7.70)		48.95 (18.97)		59.11 (38.38)	
Did not refer to a limitation n=102 (82.9%)	88.76 (56.52)	0.001	18.81 (12.48)	0.015	22.96 (15.78)	0.001	6.59 (8.06)	0.009	18.33 (15.43)	0.001	29.38 (26.44)	0.001

* significant p-value <0.05, Mann-Whitney test.

** The differences in relation to the total stem from lack of information regarding the variable.

Table 3. Correlations between the Environmental Barriers Questionnaire (QABT) and WORQ scores, applied to the studied sample. Rio Branco, Acre, 2019.

	Correlations	Spearman's correlation coefficient *
Correlations between questionnaire scores	Overall QABT and WORQ scores	0.446
	Overall QABT and WORQ scores in administrative technicians	0.645
	Overall QABT and WORQ scores in faculty members	0.281
	Medication use among women (QABT) and cognition problems (WORQ)	0.516
	Medication use among administrative technicians (QABT) and cognition problems (WORQ)	0.507
	Boss attitudes (QABT) and emotion-related problems (WORQ) among administrative technicians	0.594
	Boss attitudes (QABT) and cognition-related problems (WORQ) among administrative technicians	0.700
	Boss attitude (QABT) and self-confidence (WORQ)	0.716
	Medication use (QABT) and feeling tired (WORQ)	0.508
	Medication use (QABT) and ability to think clearly (WORQ)	0.630
	Peer support (QABT) and fatigue (WORQ)	0.502
	Skills availability (QABT) and decision-making ability (WORQ)	0.589

* Significant Spearman's correlation at level 0.01 (2-tailed).

DISCUSSION

This study proposed the creation of a questionnaire to assess environmental barriers at work based on the ICF, which showed evidence of strong reliability. The presence of disabilities, according to the WORQ, showed a positive correlation with the presence of barriers, according to the proposed questionnaire. This relevant result indicates that even active workers have problems with functioning and coping with environmental barriers, justifying attention to their health status.

The literature divides environmental factors related to work disabilities into three groups: physical (work intensity, inadequate environment), psychological (complexity, pressure), and social barriers (lack of support from colleagues and/or supervisors). In addition to these, the macro environment can also constitute a barrier due to the lack of labor policies and legislation and health monitoring in companies, inefficient social security services, among others[21]. This study corroborates these findings, pointing out that the main environmental barriers participants reported are related to organizational

issues of work, physical aspects, and support from other colleagues.

This study also showed that women had higher scores for disabilities and environmental barriers and suggested evidence that their medication use may be associated with cognition-related work functioning problems. Women are notably more susceptible to illness at work and absenteeism than men[22]. Different working conditions and relationships and ways of coping with stress and overload due to double shifts are associated with these factors[23,24].

The lack of support from immediate supervisors was strongly associated with emotional and cognitive problems among the administrative technicians in this study, who refer to it, in studies with workers who develop work disabilities, as one the main barriers[25-27]. A proactive work environment with supportive relationships that value workers constitute factors that maintain employability and favor the return to work in cases of absence[21].

Workers with functional limitations at the time of this study scored higher in both questionnaires. This finding suggests the importance of monitoring active workers so they can receive early interventions that favor their functioning, reducing future absences.

This study suggests the use of a questionnaire to identify environmental barriers related to work disabilities in large public education institutions, in which most civil servants join by public examinations, to which workers tend to remain linked for a long time, and, in case of periodic health monitoring, scarcely focus on functional issues. Their analysis showed that the instrument is reliable, suggesting its future use.

The sample of workers from a single institution prohibits the generalization of the results but this fact fails to prejudice this study since it prepared its questionnaire using the WORQ – which is generic and applicable to any group of workers. Moreover, the test-retest sample had workers available to participate in the research in two moments, a factor hindered by their working hours. Even so, the total number of participants was adequate since it represented more than 20% of the total sample. Another point to be considered was the exclusion of workers with more than six months of leave, which may have limited the results of this study since they may have significant musculoskeletal or psychic dysfunctions and were thus unable to identify their work environmental barriers.

This study is relevant as it proposes an unprecedented and reliable instrument to evaluate labor environment, testing it in a significant random sample of active workers. Further studies on measurement properties such as validity are needed to verify their applicability in worker functioning assessments.

CONCLUSION

This study developed an instrument to assess environmental barriers at work based on the ICF and evaluated its reliability. Its use would complement worker functioning assessments.

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