

Barriers and facilitators to return to work post-acute orthopedic trauma in upper limbs: an integrative literature review¹

Ana Raquel Silva^a , Mariana Midori Sime^b 

^aCentro de Reabilitação Física do Estado do Espírito Santo, Vitória, ES, Brasil.

^bUniversidade Federal do Espírito Santo – UFES, Vitória, ES, Brasil.

Abstract: Introduction: Traumatic upper limb injuries often lead to work disability. Ensuring the maintenance of the worker occupational role is a goal for occupational therapists in occupational health, using prevention and rehabilitation techniques. Therefore, it is important to know the factors that influence return to work. Objective: To document evidence of barriers and facilitators elements of return to work after acute upper limb trauma. Method: A review study using the integrative review approach. The search included Biblioteca Virtual em Saúde (BVS), Scielo, Lilacs, Periódicos Capes and Pubmed databases. Articles that mentioned a return to work and upper limb trauma in their abstract, published between 2005 and 2015 and written in Portuguese, English or Spanish, were also used. Results: The final sample consists of 13 articles, after qualitative analysis the results were grouped into four categories: Patient, Injury, Rehabilitation, and Work. Injury severity, hospitalization time, number of surgical procedures, insertion in a rehabilitation program, work-related rehabilitation, family and workplace support were the main elements identified. Conclusion: The rehabilitation program should be integrated and multidisciplinary with actions aimed at pain management, functional recovery, and preparation for a return to work. Support family member and whenever possible work environment should be considered within the vocational rehabilitation program to ensure the return to work.

Keywords: *Hand Injuries, Return to Work, Vocational Rehabilitation*

Barreiras e facilitadores do retorno ao trabalho após traumas ortopédicos agudos em membros superiores: uma revisão integrativa da literatura

Resumo: Introdução: As lesões traumáticas de membro superior frequentemente levam ao afastamento do trabalho. Assegurar a manutenção do papel ocupacional de trabalhador compõe os objetivos do terapeuta ocupacional que atua na área de saúde do trabalhador, por meio de ações de prevenção e reabilitação. Nesse sentido, é importante conhecer os fatores que influenciam no retorno ao trabalho. Objetivo: Documentar evidências sobre as barreiras e facilitadores para o retorno ao trabalho de pessoas que sofreram traumas agudos em membros superiores. Método: Estudo de revisão bibliográfica pelo método de revisão integrativa. A busca foi realizada nas bases de dados da Biblioteca Virtual em Saúde (BVS), *Scielo*, *Lilacs*, Periódicos Capes e *Pubmed*. Foram pesquisados artigos publicados no período entre 2005 e 2015, escritos em português, inglês ou espanhol. Resultados: A amostra final é composta de 13 artigos. Após a análise qualitativa, os resultados foram agrupados em quatro categorias temáticas para a verificação das barreiras e facilitadores correspondentes: Paciente, Lesão, Reabilitação e Trabalho. A gravidade da lesão, tempo de hospitalização, número de procedimentos cirúrgicos, inserção em programa de reabilitação, reabilitação voltada ao trabalho, suporte sócio familiar e no local de trabalho foram os principais elementos identificados. Conclusão: O programa de reabilitação deve ser integrado e multidisciplinar com ações voltadas ao manejo da dor, recuperação funcional e preparo para o retorno ao trabalho. O suporte sócio familiar e no ambiente de trabalho sempre que possível devem ser considerados dentro do programa de reabilitação profissional para garantir o retorno ao trabalho.

Palavras-chave: *Traumatismos da Mão, Retorno ao Trabalho, Reabilitação Profissional*

Corresponding author: Ana Raquel Silva, Centro de Reabilitação Física do Estado do Espírito Santo, Rua Gastão Roubach, s/n, Praia da Costa, CEP 29101-030, Vila Velha, ES, Brasil, e-mail: anaraquelquintas@gmail.com

Received on Dec. 18, 2017; 1st Revision on Jul. 10, 2018; 2nd Revision on Nov. 8, 2018; Accepted on Jan. 9, 2019.



1 Introduction

Traumatic lesions of the upper limb can bring several difficulties to the routine of workers, compromising the occupational performance in the activities of daily living and frequently leading to work leaving (OLIVEIRA et al., 2013). Such lesions may involve bones, muscles, tendons, peripheral nerves, and cutaneous cover, and the complexity of the lesions increases as the involved structures and the functional deficit increase (SAXENA; CUTLER; FELDBERG, 2004). The most common causes of these injuries are traffic accidents, machine accidents, falls, leisure activities or urban violence (BARBOSA et al., 2013).

A survey carried out in the city of São Paulo between 2011 and 2013 on traffic accidents showed that 52.1% of the accidents involved motorcycles. Of the victims of motorcycle accidents, 81.6% were men, 46.2% were between 20 and 29 years old, and upper limb traumas were the second major consequence (RODRIGUES et al., 2014). The age of the victims was highlighted as being the adults of productive age who often need to leave their work.

Work is more than a remunerated activity because it contributes to the consolidation of the identity, contributing to the social participation of the individual, allowing bonding and belonging to a particular group (TOLFO; PICCININI, 2007). Its importance is individually attributed, relating to the social and historical context of each individual (MORIN, 2001).

According to Cordeiro (2005), occupational roles are engaged in meaningful occupations, the adoption of behaviors and actions linked to them, providing the consolidation of personal identity. Thus, the engagement in the occupational role of the worker provides the individual with the feeling of social bonding, personal fulfillment and it helps in structuring the daily routine (MORIN, 2001). Consequently, when the performance of this occupational role is compromised, it will lead not only to financial, but also emotional and social changes.

According to the National Social Security Institute (INSS), upper limb traumas were 32.83% of the accidental sickness benefits granted in Brazil in 2017, as well as 8.44% of the social security sickness benefits (BRASIL, 2018).

In this sense, given the relevance of the occupational role of workers, ensuring their maintenance should be one of the objectives of the occupational therapist who works in the area of worker's health, through

prevention and rehabilitation (LANCMAN; GHIRARDI, 2002).

Research characterize and exemplify the performance and concern of occupational therapy in the return to work as in Figueiredo et al. (2006) study in the occupational therapy sector of a public hospital, whose objective was to document the results achieved in the rehabilitation program in three moments: admission, discharge, and follow-up. After completing the rehabilitation, patients' improvement was observed in the three aspects evaluated: prehension strength, the range of motion and sensitivity. This improvement was positively correlated with the perception of better functionality and greater satisfaction with occupational performance (FIGUEIREDO et al., 2006).

Considering the personal and socioeconomic impact of these injuries in the Brazilian scenario as described previously, studies are necessary to guide and direct rehabilitation and return to work interventions. The purpose of this review study was to document evidence on the barriers and facilitators for the return to work of people who suffered acute upper limb trauma.

2 Method

This is a descriptive study, exploratory and qualitative approach, through a bibliographic review using the integrative review method (GIL, 2002). The integrative review is a bibliographic review that aims to synthesize the knowledge about a given topic, developed in six previously established stages: elaboration of the guiding question, literature search, data collection, critical analysis of included studies, discussion of results and presentation of the integrative review (SOUZA; SILVA; CARVALHO, 2010).

The first stage was the elaboration of the guiding question. This question is answered by the review and it summarizes the topic to be clarified. In this study, the question used was: "What are the barriers factors and what are the factors that facilitate the return to work after acute traumatic orthopedic injuries in the upper limbs?".

In the next stage, the criteria for searching the databases were defined. For this study, the descriptors were selected according to the DeCS: hand trauma, return to work, readaptation to employment, occupational rehabilitation and accidents at work and their equivalents in Portuguese and Spanish. The descriptors were grouped by categories, the first one was denominated Group 1 – Work, with the descriptors: Return to Work, Professional

Rehabilitation and Job Rehabilitation. The second one was denominated Group 2 – Injury, with the descriptors: Hand Injuries and Occupational Accidents. The search was done by combining two descriptors, one of each category in the Virtual Health Library (VHL), Scielo, Lilacs, Capes Periodicals, and Pubmed databases.

After selecting the descriptors, the inclusion and exclusion criteria of the studies in the analyzed sample were defined. For this study, the following inclusion criteria were considered:

- Scientific articles with full text available;
- Publication period from 2005 to 2015;
- Publication languages: Portuguese, English or Spanish;
- Studied Population: adults;
- Mentions in the abstract on work return/role of the worker and acute orthopedic trauma.

The exclusion criteria were:

- Articles not available in complete text, published outside the defined period or in a language other than those described in the inclusion criteria;
- Texts that in the abstract do not mention the return to work/role of the worker and acute orthopedic traumas as part of the study;
- Papers with a population including children or the elderly people;
- Studies involving other musculoskeletal health conditions that were not acute traumatic orthopedic injuries;
- Review articles.

In the third stage, the articles selected from the inclusion and exclusion criteria were read in full. There was a need to create an instrument of data collection that would be sensitive to identify the information answering the guiding question. The instrument contained the following information: article code, author (s), title, journal, year of publication, country, language, study type, study objective, barrier factors for return to work and factors facilitating a return to the job. The articles that failed to respond to this instrument were excluded from the sample because they did not present information that answers the guiding question of the review.

In the fourth stage, the results obtained after the application of the instrument were synthesized and

grouped into thematic categories to be discussed (SOUZA; SILVA; CARVALHO, 2010).

3 Results and Discussion

The search in the databases generated 63 articles that corresponded to the language parameters, date of publication and availability of the full text. Pubmed was the database with the highest number of findings ($n = 24$) and ‘Hand Trauma’ AND ‘Return to Work’ was the combination of descriptors with the highest number of articles selected ($n = 44$).

Thirty-three of the 63 articles were selected for reading in full, as they did not present any of the exclusion criteria. After the application of the data collection instrument, 13 articles were chosen to be discussed because they answered the guiding question (Figure 1).

The final sample had studies conducted predominantly in Taiwan ($n = 3$), the United States ($n = 3$) and China ($n = 2$). With the exception of one Brazilian study, all were published in English. The date of publication in the sample obtained had the number of articles from the period 2010 to 2015 ($n = 9$) being more than twice as high as the period from 2005 to 2009 ($n = 4$), which may indicate an increase in research and studies with this theme.

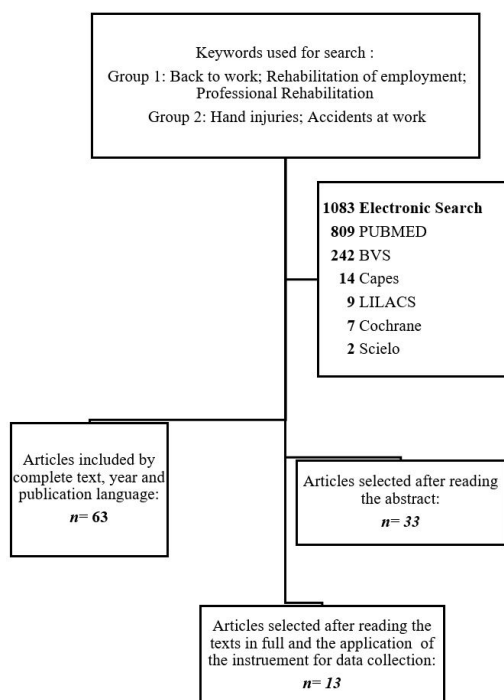


Figure 1. Articles selection.

The selected articles were coded for discussion and presented in Table 1.

After the qualitative analysis, the results were grouped into four thematic categories to verify the

barriers and corresponding facilitators: Patient, Injury, Rehabilitation, and Work. The Patient category showed the characteristics of patients who were identified as barriers or facilitators to return

Table 1. Sample articles.

Article	Source	Sample data	Type of Study	Main Objective	Measures of Evaluation/Results Evaluated
A1	Langford, Cheung and Li (2015)	Ten patients with comminuted fracture of the proximal phalanx or metacarpal head treated with wire fixation from 2005 to 2014	Qualitative	To evaluate the effectiveness (defined as a bone union and joint stability) of comminuted fractures fixation involving metacarpophalangeal joint after firearm injury or crush injury	Quick Disabilities of the Arm, Shoulder, and Hand Questionnaire, range of motion in metacarpophalangeal pain, use of the affected hand, return to work.
A2	Loisel et al. (2014)	Seventy-nine patients who suffered an accident during the carpentry activity for 2 years	Qualitative	To describe the demographic characteristics of patients with injuries during carpentry activity	Interview/Subjective Questionnaire to identify the context of the accident, characteristics of the injury, socio-occupational characteristics of the patient, severity of the sequel, and time away from work.
A3	Hu et al. (2014)	There were 246 cases of workers with work-related injuries treated in hospitals in the east region of China	Quantitative and qualitative	To explore the situations and potential determinants of return to work and length of leave after a work-related injury	Interview with a structured questionnaire to identify demographic characteristics, injury severity according to the Hand Injury Severity Scale, return and stay at work for at least 1 month
A4	Roesler, Glendon and O'Callaghan (2013)	There were 192 patients of a hand therapy clinic	Quantitative and qualitative	To develop and test a comprehensive and multivariate biopsychosocial conceptual model to predict a return to work as a result	Instruments used: Interview with socio-demographic data, Pain Rating Scale, Work Satisfaction Scale, General Self-Efficacy Scale, Positive and Negative Affect Scale, Modified Hand Injury Severity Scale, Multi-dimensional Health Locus of Control Scale Data collected: Predictors factors of return to work related to socio-demographic characteristics, work characteristics, biomedical factors, psychosocial factors, and psychological factors

Source: The authors (2017).

Table 1. Continued...

Article	Source	Sample data	Type of Study	Main Objective	Measures of Evaluation/Results Evaluated
A5	Ramel et al. (2013)	Forty people aged 19-64 years old who experienced complex hand trauma	Quantitative and qualitative	To explore important factors for the return to work of people who have experienced complex hand trauma	A self-administered questionnaire to identify demographic data, self-perception of hand and body functions, pain, health and disability status, physical and mental quality of life, work environment description, the cause of injury, treatment and rehabilitation.
A6	Hoxie et al. (2009)	There were 134 medical records of patients who suffered a hand injury by an electric saw	Quantitative	To provide detailed information on the costs of hand injury by an electric saw	Data collection by medical records Costs with medical treatment and rehabilitation, time away from work and costs with leaving from work
A7	Cheng (2008)	There were 27 respondents with moderate to severe disability due to hand trauma	Qualitative	To examine the experiences of workers who suffered hand trauma in Hong Kong	Open interviews with workers who suffered hand trauma to identify the perception of incapacity resulting from the injury and its consequences for the return to work and family life.
A8	Kadzielski, Bot and Ring (2012)	93 workers with a finger injury	Quantitative and qualitative	To evaluate the separate effects of job satisfaction, burnout and secondary gain in upper limb disability due to finger trauma.	Instruments used: <i>Shirom-Melamed's Burnout Measure</i> , <i>Job Descriptive Index questionnaire</i> , <i>Disabilities of the Arm, Shoulder, and Hand</i> , <i>Short Form Health Survey (SF-36)</i> , <i>Mental Component Summary</i> , <i>Physical Component Summary</i> . Data collected: demographic data, burnout, job satisfaction, upper limb functional condition, and overall health status.

Source: The authors (2017).

Table 1. Continued...

Article	Source	Sample data	Type of Study	Main Objective	Measures of Evaluation/Results Evaluated
A9	Matsuzaki et al. (2009)	There were 50 patients with total or partial amputation of their finger	Quantitative	To investigate the effects of severity and the cause of the hand trauma injury on functional recovery and return to work	<p>Instruments used: <i>Tamai's Score, Quick Disabilities of the Arm, Shoulder, and Hand, Hand Injury Severity Scale.</i></p> <hr/> <p>Data collected: sensory recovery, the range of motion of the finger, skin temperature, manual function, return to work condition, duration of treatment, time away from work, the severity of the injury, number of fingers involved and type of injury.</p>
A10	Chen et al. (2012)	There were 120 patients from a reconstructive and plastic rehabilitation center with traumatic upper limb injury	Quantitative and qualitative	To investigate the relationship between injury severity, self-perceived health, demographic characteristics and time away from work, after work-related upper limb trauma and the influence of psychological factors for fitness for return to work	<p>Instruments used: <i>Modified Hand Injury Severity Score, Short Form Health Survey (SF-36)</i></p> <hr/> <p>Data collected: severity of trauma, self-perceived health, time away from work</p>
A11	Cabral et al. (2010)	Thirty-five hand trauma workers attended at a rehabilitation center	Quantitative and qualitative	To describe the workers who returned to work after a hand trauma and analyze the factors they associated with this outcome after three years of high rehabilitation.	<p>Instruments used: anamnesis, dynamometer, and <i>Canadian Occupational Performance Measure.</i></p> <hr/> <p>Data collected: gender, age, marital status, school level, the labor situation, type of accident, occupation, affected side, dominance, causative agent, diagnosis, time of exercise of the professional activity, rehabilitation time, prehension strength, occupational performance, and work situation.</p>

Source: The authors (2017).

Table 1. Continued...

Article	Source	Sample data	Type of Study	Main Objective	Measures of Evaluation/Results Evaluated
A12	Du, Lai and Wang (2007)	There were 102 hospitalized workers with non-severe upper limb fracture	Qualitative	To study the factors influencing the return to work of individuals with upper limb fracture	Instruments used: an interview with a structured questionnaire, report of the department of labor insurance and labor inspection. Data collected: severity of the injury, socio-demographic data, information about medical treatment and hospitalization, psychosocial condition, employment conditions.
A13	Lee et al. (2010)	There were 140 patients hospitalized for a hand injury	Qualitative	To examine the relationship between initial anatomic severity and the possibility of a return to work of patients with hand injuries	Instruments used: <i>Hand Injury Severity score</i> and an interview. Data collected: socio-demographic characteristics, occupational characteristics, the severity of the lesion.

Source: The authors (2017).

to work, found in 8 articles. The category Lesion showed the aspects of traumatic upper limb injuries related as barriers or facilitators to return to work, found in 11 articles. The category Rehabilitation showed the post-surgical treatment to which the patients were submitted and to the strategies used as barriers or facilitators to return to work, found in 5 articles. Finally, the Work category showed the work-related conditions that were classified as barriers or facilitators to return to work, found in 8 articles (Table 2).

The category Patient identified socio-demographic, behavioral and health characteristics as barriers and facilitators. The facilitators found were higher levels of school (A3 and A10), lower number of family dependents (A3), self-efficacy (A4), family social support (A7 and A13) and higher satisfaction with health and functionality (A1 and A10). The data found are consistent with the findings in the literature that report higher school level and presence of socio-family support as facilitators to return to work (SILVA; GUIMARÃES; RODRIGUES, 2007). The barriers found were to live alone (A4), lower satisfaction with health (A5), the absence of family support (A7), abandonment of rehabilitation (A1), diagnosis of burnout syndrome before the injury (A8), and

attribute the recovery to external factors (A4). In a study carried out to analyze factors related to the duration of disability benefits granted by the INSS, the age under 39 years, the worse socioeconomic situation and high expectation of a return to work were highlighted as factors associated with a shorter duration of benefit (SOUZA; SANTANA, 2012). Another study conducted with victims of traffic accidents to analyze predictors of return to work identified that those who returned to work 6 months after injury had higher SF-36 values for the domains of functional capacity, general health status, pain, physical aspects, social aspects, emotional aspects and mental health (PAIVA et al., 2016).

The category Injury identified the severity of the lesion as the central axis for the definition of barriers and facilitators. The most severe lesions (A3, A6, A9, A10, A12, and A13) were identified as barriers, requiring more than one surgical intervention and (A1, A6), longer hospitalization time (A2, A3, and A5) or longer treatment time (A9 and A10). Other barriers identified were residual pain (A8), lesions affecting dominant limbs (A12), injuries that resulted in permanent disability (A7) and injuries that resulted in a higher economic cost for treatment (A6). The literature indicates a

Table 2. Analysis Categories.

Category	RT facilitating factors	Articles with evidence	Factors barriers for RT	Articles with evidence
Patients	Higher school level	A3, A13	Living alone	A4
	The lower number of family dependents	A3	Locus of external control	A4
	Self-efficacy	A4	Lower satisfaction with health	A5
	Family member support	A7, A13	The absence of family support	A7
	Higher satisfaction with health and functionality	A1, A10	Abandonment of Rehabilitation <i>Burnout</i> anterior a lesão	A1 A8
Injury	Lower surgical procedures	A1, A6	A higher number of surgical procedures	A1, A6
	Injuries that did not require hospitalization	A3	Longer hospitalization time	A2, A3, A5
	Lower severity of the injury	A3, A6, A9	Higher severity of the injury	A3, A6, A9, A10, A12, A13
	Injury not caused by an accident at work	A3	Pain	A8
	Shorter treatment time	A9	Longer treatment time	A9, A10
	Minimal to moderate pain	A1	Injury to the dominant limb	A12
			Permanent disability	A7
			Injuries that demanded greater economic cost	A6
Rehabilitation	ADM recovery	A1	Scar adherence	A1
	Occupational training	A2	Worst manual function, prehension, strength, dexterity, and joint mobility	A5
	Early rehabilitation program	A5	Greater time in rehabilitation	A10
	Higher prehension strength at rehabilitation discharge	A11	Lower prehension strength on rehabilitation discharge	A11
	Early start in work-oriented rehabilitation programs	A10	Less time in rehabilitation	A11
Work	Receive insurance due to work accident	A3, A12, A13	Receive compensation for an accident at work	A8
	Do not have salary change due to leave work	A3	The decrease in salary due to leave work	A3
	Less time away from work	A3, A9	Longer time away from work	A2, A3, A5, A9
	Workplace support	A5, A7	No support in the workplace	A7
	Satisfaction with work	A8		
	Stability in employment	A12		
	Non-manual workers	A12, A13		
Higher wages	A13			

Source: The authors (2017).

direct relationship between greater severity of the injury and greater difficulty in returning to work (CHEN et al., 2016). Another study associated higher severity of the injury with longer treatment time, with a longer time away from work and a lower probability of returning to work in the previous function (SHI et al., 2014).

The facilitators found in the category Injury were concordant with the barriers presented, with lower severity of the injury (A3, A6, and A9), fewer surgical procedures (A1 and A6), not requiring hospitalization (A3), Lower time of treatment (A9) and minimal to moderate pain complaint (A1). Also, injuries not caused by an accident at work were also pointed out as facilitators (A3). The authors reported that patients with shorter hospital stay returned to work faster than patients with longer hospital stays (HOU et al., 2008).

The category Rehabilitation identified strategies and aspects related to rehabilitation that influence return to work. Some of the factors barriers are a worse manual function, prehension, strength, dexterity and joint mobility (A5) and healing adherence (A1). Regarding the rehabilitation time, the study A10 related a greater time of rehabilitation with a longer period of time away and work is, therefore, a barrier element to return to work. However, study A11 pointed to longer rehabilitation as a facilitator for a return to work in complex injuries, considering that actions should be focused on identifying difficulties and helping to return to work. The rehabilitation strategies found in the literature as facilitators were adequate therapeutic management that involves the use of better diagnostic strategies - doppler, ultrasonography, angiography and computed tomography -, rehabilitation with physiotherapy and occupational therapy for pain control, psychological support and use of Assistive technology (GALANAKOS et al., 2014).

In addition to rehabilitation programs, other facilitators identified were an early insertion in a rehabilitation program (A5) or a work-related rehabilitation program (A10), participation in occupational training programs (A2), and joint mobility rehabilitation (A1). On the other hand, delay for inclusion in health rehabilitation services and lack of integrated actions among health, social security, and professional rehabilitation were identified as barriers to return to work and detrimental to individuals' quality of life (TOLDRÁ, 2010).

Finally, the category Work identified as facilitating elements to receive work accident insurance

(A3, A12 and A13), shorter time spent away from work (A3 and A9), not suffered a salary change due to leaving work (A3), on-site support (A5 and A7), job satisfaction (A8), job stability (A12), non-manual jobs performance (A12 and A13) and receive higher wages (A13). In agreement with these findings, support from the company and co-workers was also a facilitator found in the literature (SILVA; GUIMARÃES; RODRIGUES, 2007).

On the other hand, the barriers identified in this category were a reduction of the salary due to the absence (A3), longer time away from work (A2, A3, A5, and A9) and absence of support in the workplace (A7). Study A8 identified that receiving work-related compensation is a barrier to return to work, but the literature points out that receiving compensation damages return to work when associated with non-referral to a rehabilitation program (VACARO; PEDROSO, 2011).

Although the results have been grouped into categories, most of the factors identified are interrelated. The severity of the injury, for example, is a characteristic of the lesion, but interferes in the time of rehabilitation, the greater possibility of a sequel and the need for adaptations in the function. In this sense, it is important that professionals do not deal with isolated factors, but rather understand their complexity, seeking integrated actions among health teams, professional rehabilitation programs, and social security.

4 Conclusion

The main limiting factors are related to the expressive number of international texts when compared to the number of national publications, in which they may not present the Brazilian reality. Moreover, the absence of studies published in European journals for the composition of the final sample may be limited by the established inclusion and exclusion criteria. Another limiting factor of the study is the search for only free articles available in full since the research did not receive funding. Finally, the descriptors used directed the results to intervention strategies to be developed in health and rehabilitation institutions, to the detriment of actions taken in the work environment.

The main results indicated the severity of the injury, length of hospitalization and number of surgical procedures as elements that are directly related to return to work. The findings point to the need for an integrated rehabilitation program involving mainly professionals in physical therapy,

occupational therapy, and psychology with actions aimed at pain management, functional recovery and work-related interventions.

Social support, both in the family and in the work environment, has been identified as an influential factor in the return to work, and it is up to the professionals involved in the assistance care so the factors act as facilitators. The work environment and work organization, whenever possible, should be evaluated and modified within a professional rehabilitation program to ensure that at the end of rehabilitation the individual can effectively return to work.

References

- BARBOSA, R. I. et al. Perfil dos pacientes com lesões traumáticas do membro superior atendidos pela fisioterapia em hospital do nível terciário. *Acta Fisiátrica*, São Paulo, v. 20, n. 1, p. 14-19, 2013. Disponível em: <http://www.actafisiatrica.org.br/detalhe_artigo.asp?id=489>. Acesso em: 03 abr. 2017.
- BRASIL. Ministério da Economia. *Dados abertos da previdência social – Tabelas do Anuário Estatístico da Previdência Social*. Brasília: Instituto Nacional do Seguro Social, 2018. Disponível em: <<http://www.previdencia.gov.br/dados-abertos/estatisticas/tabelas-cid-10/>>. Acesso em: 25 ago. 2018.
- CABRAL, L. H. A. et al. Fatores associados ao retorno ao trabalho após um trauma de mão: uma abordagem quali-quantitativa. *Revista Brasileira de Fisioterapia*, São Carlos, v. 14, n. 2, p. 149-157, 2010. Disponível em: <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-35552010000200010>. Acesso em: 13 set. 2016.
- CHEN, Y. H. et al. Entry into vocational rehabilitation program following work-related hand injury: potential candidates. *International Journal of Occupational Medicine and Environmental Health*, Polonia, v. 29, n. 1, p. 101-111, 2016. Disponível em: <<http://ijomeh.eu/Entry-into-vocational-rehabilitation-program-following-work-related-hand-injury-potential-candidates,58530,0,2.html>>. Acesso em: 22 abr. 2017.
- CHEN, Y. H. et al. Self-perceived health and return to work following work-related hand injury. *Occupational Medicine*, London, v. 62, n. 4, p. 295-297, 2012. Disponível em: <<https://academic.oup.com/occmed/article-lookup/doi/10.1093/occmed/kqr215>>. Acesso em: 28 out. 2016.
- CHENG, Y. H. Against the odds or odds-on chance: pathways of coming back among hand-injured workers in the Chinese context. *Qualitative Health Research*, Thousand Oaks, v. 18, n. 6, p. 843-852, 2008. Disponível em: <<http://journals.sagepub.com/doi/pdf/10.1177/1049732308318037>>. Acesso em: 26 out. 2016.
- CORDEIRO, J. J. R. *Validação da lista de identificação de papéis ocupacionais em pacientes portadores de doença pulmonar obstrutiva crônica (DPOC) no Brasil*. 2005. 111 f. Dissertação (Mestrado em Ciências da Saúde) – Universidade Federal de São Paulo, São Paulo, 2005.
- DU, C. L.; LAI, C. F.; WANG, J. D. Delayed return-to-work in workers after non-severe occupational upper extremity fracture in Taiwan. *Journal of the Formosan Medical Association*, Taipei, v. 106, n. 11, p. 887-893, 2007. Disponível em: <[http://www.jfma-online.com/article/S0929-6646\(08\)60058-3/pdf](http://www.jfma-online.com/article/S0929-6646(08)60058-3/pdf)>. Acesso em: 30 out. 2016.
- FIGUEIREDO, I. M. et al. Ganhos funcionais e sua relação com os componentes de função em trabalhadores com lesões de mão. *Revista Brasileira de Fisioterapia*, São Carlos, v. 10, n. 4, p. 421-427, 2006. Disponível em: <<http://www.scielo.br/pdf/rbfs/v10n4/09.pdf>>. Acesso em: 13 set. 2016.
- GALANAKOS, S. P. et al. Psychological and social consequences after reconstruction of upper extremity trauma: methods of detection and management. *Journal of Reconstructive Microsurgery*, New York, v. 30, n. 3, p. 193-206, 2014. Disponível em: <<http://www.thieme-connect.com/DOI/DOI?10.1055/s-0033-1361838>>. Acesso em: 24 out. 2016.
- GIL, A. C. *Como elaborar projetos de pesquisa*. São Paulo: Atlas, 2002.
- HOU, W. H. et al. Worker's compensation and return-to-work following orthopaedic injury to extremities. *Journal of Rehabilitation Medicine*, Stockholm, v. 40, n. 6, p. 440-445, 2008. Disponível em: <<https://www.medicaljournals.se/jrm/content/abstract/10.2340/16501977-0194>>. Acesso em: 28 out. 2016.
- HOXIE, S. C. et al. The economic impact of electric saw injuries to the hand. *Journal of Hand Surgery American*, Thousand Oaks, v. 34, n. 5, p. 886-889, 2009. Disponível em: <[http://www.jhandsurg.org/article/S0363-5023\(09\)00111-7/fulltext](http://www.jhandsurg.org/article/S0363-5023(09)00111-7/fulltext)>. Acesso em: 26 out. 2016.
- HU, J. et al. Predictors of return to work and duration of absence following work-related hand injury. *International Journal of Injury Control and Safety Promotion*, London, v. 21, n. 3, p. 216-223, 2014. Disponível em: <<https://www.ncbi.nlm.nih.gov/pubmed/23638695>>. Acesso em: 24 out. 2016.
- KADZIELSKI, J. J.; BOT, A. G. J.; RING, D. The influence of job satisfaction, burnout, pain, and worker's compensation status on disability after finger injuries. *Journal of Hand Surgery American*, Thousand Oaks, v. 37, n. 9, p. 1812-1819, 2012. Disponível em: <[http://www.jhandsurg.org/article/S0363-5023\(12\)00722-8/fulltext](http://www.jhandsurg.org/article/S0363-5023(12)00722-8/fulltext)>. Acesso em: 27 out. 2016.

- LANCMAN, S.; GHIRARDI, M. I. G. Pensando novas práticas em terapia ocupacional, saúde e trabalho. *Revista de Terapia Ocupacional da Universidade de São Paulo*, São Paulo, v. 13, n. 2, p. 44-50, 2002.
- LANGFORD, M. A.; CHEUNG, K.; LI, Z. Percutaneous distraction pinning for metacarpophalangeal joint stabilization after blast or crush injuries of the hand. *Clinical Orthopaedics and Related Research*, Philadelphia, v. 473, n. 9, p. 2785-2789, 2015. Disponível em: <<http://dx.doi.org/10.1007/s11999-015-4233-x>>. Acesso em: 27 out. 2016.
- LEE, Y. Y. et al. Association between the initial anatomical severity and opportunity of return to work in occupational hand injured patients. *Journal of Trauma*, Baltimore, v. 69, n. 6, p. 88-93, 2010. Disponível em: <<https://www.ncbi.nlm.nih.gov/pubmed/20489670>>. Acesso em: 30 out. 2016.
- LOISEL, F. et al. Woodworking injuries: a comparative study of work-related and hobby-related acidentes. *Chirurgie de la Main*, Paris, v. 33, n. 5, p. 325-329, 2014. Disponível em: <<http://www.sciencedirect.com/science/article/pii/S1297320314000997>>. Acesso em: 30 out. 2016.
- MATSUZAKI, H. et al. Predicting functional recovery and return to work after mutilating hand injuries: usefulness of Campbell's Hand Injury Severity Score. *Journal of Hand Surgery American*, Thousand Oaks, v. 5, n. 34, p. 880-885, 2009. Disponível em: <[http://www.jhandsurg.org/article/S0363-5023\(09\)00118-X/fulltext](http://www.jhandsurg.org/article/S0363-5023(09)00118-X/fulltext)>. Acesso em: 30 out. 2016.
- MORIN, E. M. Os sentidos do trabalho. *Revista de Administração de Empresas*, São Paulo, v. 41, n. 3, p. 8-19, 2001. Disponível em: <<http://www.scielo.br/pdf/rae/v41n3/v41n3a02.pdf>>. Acesso em: 30 out. 2016.
- OLIVEIRA, T. P. et al. Estudo retrospectivo dos acidentes traumáticos da mão relacionados ao trabalho. *Cadernos de Terapia Ocupacional da UFSCar*, São Carlos, v. 21, n. 2, p. 339-349, 2013. Disponível em: <<http://doi.editoracubo.com.br/10.4322/cto.2013.035>>. Acesso em: 30 out. 2017.
- PAIVA, L. et al. Estado de saúde e retorno ao trabalho após os acidentes de trânsito. *Revista Brasileira de Enfermagem*, Brasília, v. 69, n. 3, p. 416-422, 2016. Disponível em: <<http://www.scielo.br/pdf/reben/v69n3/0034-7167-reben-69-03-0443.pdf>>. Acesso em: 30 out. 2016.
- RAMEL, E. et al. Return to work after a serious hand injury. *Work*, Amsterdam, v. 44, n. 4, p. 459-469, 2013. Disponível em: <<http://content.iospress.com/articles/work/wor01373>>. Acesso em: 30 out. 2016.
- RODRIGUES, C. L. et al. Acidentes que envolvem motociclistas e ciclistas no município de São Paulo: caracterização e tendências. *Revista Brasileira de Ortopedia*, São Paulo, v. 49, n. 6, p. 602-606, 2014. Disponível em: <http://www.scielo.br/pdf/rbort/v49n6/pt_0102-3616-rbort-49-06-0602.pdf>. Acesso em: 30 out. 2017.
- ROESLER, M. L.; GLENDON, A. I.; O'CALLAGHAN, F. V. Recovering from traumatic occupational hand injury following surgery: a biopsychosocial perspective. *Journal of Occupational Rehabilitation*, New York, v. 23, n. 4, p. 536-546, 2013. Disponível em: <<https://link.springer.com/article/10.1007%2Fs10926-013-9422-4>>. Acesso em: 30 out. 2016.
- SAXENA, P.; CUTLER, L.; FELDBERG, L. Assessment of the severity of hand injuries using 'hand injury severity score', and its correlation with the functional outcome. *Injury*, Netherlands, v. 35, n. 5, p. 511-516, 2004. Disponível em: <[http://www.injuryjournal.com/article/S0020-1383\(03\)00211-0/abstract](http://www.injuryjournal.com/article/S0020-1383(03)00211-0/abstract)>. Acesso em: 30 out. 2016.
- SHI, Q. et al. A systematic review of prognostic factors for return to work following work-related traumatic hand injury. *Journal of Hand Therapy*, Philadelphia, v. 27, n. 1, p. 55-62, 2014. Disponível em: <[http://www.jhandtherapy.org/article/S0894-1130\(13\)00156-7/fulltext](http://www.jhandtherapy.org/article/S0894-1130(13)00156-7/fulltext)>. Acesso em: 30 out. 2016.
- SILVA, S. R.; GUIMARÃES, E. V.; RODRIGUES, A. M. V. N. Aspects connected with returning to work process of individuals with musculoskeletal disorders: a commented bibliography. *Revista de Terapia Ocupacional da Universidade de São Paulo*, São Paulo, v. 18, n. 1, p. 38-43, 2007.
- SOUZA, M. T.; SILVA, M. D.; CARVALHO, R. Revisão integrativa: o que é e como fazer. *Einstein*, São Paulo, v. 8, n. 1, p. 102-106, 2010. Disponível em: <http://www.scielo.br/pdf/eins/v8n1/pt_1679-4508-eins-8-1-0102.pdf>. Acesso em: 30 out. 2016.
- SOUZA, N. S. S.; SANTANA, V. S. Fatores associados à duração dos benefícios por incapacidade: um estudo de coorte. *Revista de Saúde Pública*, São Paulo, v. 46, n. 3, p. 425-434, 2012. Disponível em: <<http://www.scielo.br/pdf/rsp/v46n3/3493.pdf>>. Acesso em: 30 out. 2016.
- TOLDRÁ, R. C. Facilitadores e barreiras para o retorno ao trabalho: a experiência de trabalhadores atendidos em um Centro de Referência em Saúde do Trabalhador – SP, Brasil. *Revista Brasileira de Saúde Ocupacional*, São Paulo, v. 35, n. 121, p. 10-22, 2010. Disponível em: <<http://www.scielo.br/pdf/rbso/v35n121/03.pdf>>. Acesso em: 30 out. 2016.
- TOLFO, S. R.; PICCININI, V. Sentidos e significados do trabalho: explorando conceitos, variáveis e estudos empíricos brasileiros. *Psicologia & Sociedade*, Belo Horizonte, v. 19, p. 38-46, 2007. Número Especial.
- VACARO, J. E.; PEDROSO, S. F. Desempenho dos segurados no serviço de reabilitação do Instituto Nacional de Seguridade Social. *Acta Fisiátrica*, São Paulo, v. 18, n. 4, p. 200-205, 2011. Disponível em: <http://www.actafisiatrica.org.br/detalhe_artigo.asp?id=16#>. Acesso em: 30 out. 2016.

Author's Contributions

Ana Raquel Silva was responsible for researching and writing the text. Mariana Midori Sime was responsible for guiding the research and review of the text. Both authors approved the final version of the text.

Notes

¹ This paper is part of the first author's Course Conclusion Paper, presented at the Lato-Sensu Post-Graduation Course in Hand Therapy and Neurological Rehabilitation in Occupational Therapy, Federal University of São Carlos, as a partial requirement for completion of the course.