

University of Groningen

The role of significant others in work re-integration of workers with chronic diseases

Snippen, Nicole

DOI:
[10.33612/diss.580382109](https://doi.org/10.33612/diss.580382109)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2023

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):
Snippen, N. (2023). *The role of significant others in work re-integration of workers with chronic diseases*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.
<https://doi.org/10.33612/diss.580382109>

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Chapter 8

General discussion

General discussion

This thesis had two main aims. The first aim of this thesis was to gain more knowledge about the influence of significant others on work outcomes of workers with chronic diseases. The second aim was to gain insight into perspectives of workers and occupational health physicians on significant other involvement in occupational health care, and to strengthen the supportive role of occupational health physicians through the development and evaluation of education on involving significant others in the re-integration process. This chapter summarizes and reflects on the main findings of this thesis and presents methodological considerations. Moreover, recommendations for occupational health care and further research are provided.

Main findings

The influence of significant others on work outcomes of workers with chronic diseases

The first part of this thesis provided an overview of empirical evidence on individual and interpersonal factors of workers and their significant others that may influence work outcomes and can be targeted to better support workers in their work re-integration process.

In the literature review described in *Chapter 2*, evidence was found that cognitions and behaviors of significant others can facilitate or hinder work participation of workers with chronic diseases. For instance, it was found that positive attitudes of significant others regarding work participation can facilitate positive work outcomes, while negative perceptions about the worker's disease and pressure from significant others to refrain from work can be barriers to work participation. Most studies included in this review were qualitative, and therefore it was concluded that more quantitative studies on this topic are needed to provide a higher level of evidence on the influence of cognitions and behaviors of significant others on work outcomes.

The research described in *Chapter 3* and *Chapter 4* built upon the findings of the literature review and provided more quantitative evidence on the role of illness perceptions and return to work expectations of workers and their significant others in the context of return to work. In *Chapter 3*, the associations between illness perceptions and expectations about full return to work in dyads of workers and their significant others were examined. The findings showed that illness perceptions and expectations about the worker's return to work of workers and their significant others are interdependent, and that more negative illness perceptions of one member of the dyad are associated with more negative return to work expectations in both dyad members. The study described in *Chapter 4* examined whether return to work expectations, illness perceptions, and perceptions about the significant other's engagement, buffering and overprotection within dyads are associated with the duration of sick leave of workers. It was found that return to work expectations and illness perceptions of both workers

and significant others are associated with the duration of sick leave. Perceptions about the significant other's engagement, buffering and overprotection were not associated with the sick leave duration of workers. Taken together, the findings of both studies suggest that a dyadic approach targeting both workers and their significant others might be more effective than an individualistic approach when trying to improve illness perceptions and return to work expectations to support return to work.

Involving significant others in occupational health care

In the second part of this thesis, insight was gained into perspectives of workers and occupational health physicians on involving significant others in occupational health care and how the supportive role of occupational health physicians in this context can be strengthened.

In a survey study among occupational health physicians (*Chapter 5*) and a focus group study among workers with chronic diseases (*Chapter 6*), it was found that both stakeholders felt that it is not always necessary to involve significant others in occupational health care. Rather, the findings of these studies suggest that involvement of a significant other in the re-integration process needs to be tailored to the specific situation of the individual worker, taking into account the circumstances, characteristics and preferences of the worker and significant other. For instance, while significant others are better able to support the worker's re-integration when they are informed about the re-integration plans, their involvement can also have drawbacks such as interference during consultations or the provision of unwanted support. While these studies indicate that workers and occupational health physicians recognize that involving significant others in occupational health care could be beneficial, they also provided insight into barriers for significant other involvement, including lack of time, privacy concerns and low self-efficacy of occupational health physicians to address the influence of significant others.

Development and evaluation of education for occupational health physicians

The knowledge that was acquired in the first five studies in this thesis was integrated in the e-learning module "*Training for Occupational Health Physicians to Involve Significant Others*" (TOTIS). This e-learning module was developed to educate occupational health physicians on how they can best address the role of significant others and manage their involvement in the return-to-work process of workers with chronic diseases. In addition, accompanying materials were developed that occupational health physicians can use in their daily practice. The development and evaluation of the e-learning module in a randomized controlled trial were described in Chapter 7. This study showed that the TOTIS e-learning module was effective in improving knowledge, attitudes, and self-efficacy of occupational health physicians with regard to involving significant others in the return-to-work process of sick-listed workers. Moreover, occupational health physicians evaluated the e-learning

module positively. They suggested that the TOTIS e-learning module and accompanying materials can be valuable resources to increase occupational health physicians' awareness about the role of significant others and to stimulate them to address this topic more often in the re-integration process.

Reflection on main findings

It is widely recognized that environmental factors play an important role in whether an individual is able to work despite his or her disease [1–5]. While the role of work environmental factors has been frequently investigated [3,4,6–11], little attention has been paid to factors in the personal environment that can influence work participation of workers with chronic diseases. This thesis addressed this knowledge gap by focusing on the role of significant others in the return-to-work process of sick-listed workers.

The studies in this thesis contribute to the further development of the field of occupational health care by considering work re-integration from a *dyadic perspective*. While the role of interpersonal and dyadic processes in coping and adaptation to chronic illness is well-established [12–19], this thesis provides novel insights into the role of interpersonal and dyadic processes between workers and significant others in the context of return to work. In *Chapter 3* and *Chapter 4*, we introduced *dyadic research methods*, which use is unique in occupational health research. The findings of these studies provide evidence that illness perceptions and return to work expectations of workers and their significant others are interdependent and associated with the worker's sick leave duration. These findings provide some support for the assumption of dyadic models [20,21] that dyad members influence each other's cognitions, coping responses and outcomes, and that coping and adaptation to chronic disease should therefore be viewed from a dyadic perspective. However, the findings of this thesis only partially support theoretical models and prior research findings concerning the influence of behaviors of significant others on coping and adaptation to chronic illness. More specifically, while we found some evidence in *Chapter 2* that behaviors of significant others can facilitate or hinder work participation of workers with chronic diseases, in *Chapter 4* we did not find evidence that active engagement, protective buffering and overprotection of significant others are associated with sick leave duration of workers. A possible explanation for that is that we used generic measures of significant other responses rather than specific measures on work-related responses of significant others. Context specific measures have been found to be more sensitive for the detection of associations and effects than generic measures [22,23].

The research in this thesis was an important first step to further develop the field of occupational health care and to strengthen the supportive role of occupational health physicians with respect to helping workers with chronic diseases to use their own social resources in the work re-integration process. The findings of *Chapter 5* and *Chapter 6* confirm prior research indicating that while involving significant others in the re-integration

process can be valuable, occupational health consultations in which the worker is accompanied by a significant other are not without challenges [24,25]. With the development of the TOTIS e-learning module, we provided further guidance and training for occupational health physicians on involving significant others in the work re-integration process. The e-learning module makes knowledge on interpersonal processes that play a role in work outcomes and how this can be taken into account in occupational health care to better support workers in their recovery and return to work available and accessible to occupational health physicians. Moreover, the e-learning module is accompanied by materials that occupational health physicians can use to assess the influence of significant others and manage their involvement in the re-integration process. Our findings in *Chapter 7* indicate that the e-learning module and accompanying materials can not only improve occupational health physicians' knowledge, attitudes and self-efficacy with regard to significant other involvement, but also increase their awareness about the role of significant others and stimulate them to address this topic more often in their daily practice. The TOTIS e-learning module can therefore be an important means of enabling occupational health physicians to obtain new knowledge, increase their self-efficacy concerning involving significant others, and to promote behavioral change among occupational health physicians. As such, the e-learning module and the accompanying materials can play an important role in the implementation of research findings on the role of significant others in work re-integration and how to address this in occupational health practice [26–30]. However, as will be further discussed below, additional research is needed to determine whether the e-learning module affects the behavior of occupational health physicians and whether such behavioral changes result in improved outcomes among workers and their significant others.

Methodological considerations

The results of this thesis should be evaluated in light of some methodological considerations. In this section methodological issues concerning the research methods and the quality of the data used in this thesis are discussed.

A mixed-method approach was applied to answer the research questions in this thesis, with quantitative and qualitative research complementing each other. The combination of quantitative and qualitative research methods enriched our understanding of the role of cognitions, behaviors and interactions of workers and their significant others in work re-integration and how this can be taken into account in occupational health care. More specifically, the quantitative research methods (*Chapter 3, 4 and 5*) enabled us to test for associations between variables, whereas the qualitative research methods (*Chapter 5 and 6*) enabled us to gain a deeper and broader understanding of considerations with respect to significant other involvement in the work re-integration process.

Previous research has emphasized the importance of stakeholder experiences and perspectives in the context of translating scientific knowledge into practice [31–34]. In this

thesis, we explored the perspectives of both occupational health physicians (*Chapter 5*) and workers with chronic diseases (*Chapter 6*) to gain a comprehensive understanding of stakeholder experiences, views and considerations with regard to significant other involvement in occupational health care. However, we did not explore the perspectives of significant others on this topic. As a result, we might have missed considerations that are important for successful implementation of significant other involvement in occupational health care.

Furthermore, we introduced the use of dyadic analyses in two studies (*Chapter 3* and *Chapter 4*), which allowed us to study both individual and interpersonal associations while taking the interdependence between two individuals in a dyad into account [35]. However, the findings indicated the presence of nonresponse bias in these studies, which resulted in an overrepresentation of workers and significant others who were highly satisfied with their relationship in the study samples. Nonresponse bias is not uncommon and it is a known phenomenon in dyadic research that couples who are more satisfied with their relationship are often overrepresented in dyadic study samples [36–38]. In the presence of nonresponse bias in dyadic research, it is important to be cautious in the generalization of study findings because the interpersonal associations might differ depending on the dyads members' relationship satisfaction and other relationship factors [36]. With respect to the studies in *Chapter 3* and *Chapter 4*, it is important to recognize that while the findings apply to dyads who are highly satisfied with their relationship, they may not generalize to dyads who are less satisfied with their relationship.

Finally, we performed a well-designed randomized controlled trial (RCT) to study the effects of the TOTIS e-learning module on occupational health physicians' knowledge, attitudes and self-efficacy, allowing causal inferences (*Chapter 7*). RCTs are often considered to be the gold standard in determining the impact of an intervention as this design is known to minimize confounding factors, as well as allocation and selection bias [39]. However, our findings are limited to effects of the e-learning module on the behavioral determinants knowledge, attitudes and self-efficacy. As we did not measure the actual behavior of occupational health physicians and whether such behavioral changes result in better recovery and return to work outcomes of workers, the effects of the TOTIS e-learning module in the real-world setting are unknown.

Implications and recommendations for policy and practice

Based on the findings of this thesis and the topics discussed in this chapter, several recommendations can be made for workers and their significant others, occupational health physicians and other stakeholders involved in the occupational health care system.

Implications and recommendations for workers and their significant others

An important finding in this thesis is that significant others may influence return to work of workers with chronic diseases. Workers can use this knowledge and act on it to make better use of their own personal resources. Workers should be aware of the possibility to involve a significant other in occupational health care and of the potential benefits and drawbacks of such involvement. When workers would like to include a significant other in the re-integration process, they should discuss with the occupational health physician whether and how a significant other could be involved. Furthermore, it is important that workers and significant others talk with each other about the disease, work and how to cope with the situation. In this context, workers and their significant others can discuss questions such as: What are the consequences of the disease? How can we cope with the situation together? What are our expectations about return to work? How can the significant other support the worker in recovery and work re-integration? Is additional help or support needed and from whom (e.g., other family members, friends, health care professionals)?

Implications and recommendations for occupational health physicians

The findings of this thesis confirm that it is important that occupational health physicians take into account that significant others can play an important role in how workers cope with their disease, thereby influencing work and health outcomes. In order to better support workers to use their own resources, occupational health physicians should inform workers of the possibility to involve significant others in the re-integration process. Especially in the case of stagnation of re-integration or ineffective coping of workers, occupational health physicians should ask about the worker's preferences and discuss possibilities to involve significant others in the re-integration process in order to tailor any significant other involvement to a worker's specific situation and needs.

Similarly, it might be particularly beneficial to pay attention to illness perceptions and return to work expectations of workers and their significant others in the case of coping issues or stagnation of recovery or re-integration. Assessing these factors can not only help occupational health physicians to identify workers at higher risk of long-term sickness absence, but can also provide insight into inadequate or maladaptive perceptions and expectations that may be modified to facilitate return to work [40]. Occupational health physicians can for instance explore return to work expectations by asking workers and significant others about their thoughts about the worker's ability to return to work and when they expect the worker to be back at work. Concerning illness perceptions, occupational health physicians could use the revised or brief version of the Illness Perception Questionnaire (IPQ) to explore the perceptions of workers and significant others [41,42]. In situations in which there is no significant other present during consultations, occupational health physicians can ask the worker about how his or her significant other thinks about the worker's

illness and return to work to gain some insight into the significant other's illness perceptions and return to work expectations.

Considering the interdependence within dyads, involving significant others when trying to facilitate adaptive illness perceptions and return to work expectations may be more effective than an individualistic approach in which only the worker's perceptions and expectations are targeted. Therefore, occupational health physicians should consider using a dyadic approach to modify illness perceptions and return to work expectations that hinder recovery and sustainable return to work. In this context, occupational health physicians can facilitate accurate and adaptive illness perceptions and return to work expectations of workers and their significant others by providing information about the worker's disease and the return-to-work process [41–45]. Moreover, informing significant others about the re-integration plans and actively involving them in decision-making could help to better manage their expectations about recovery and return to work and help workers and significant others to apply adaptive coping strategies. When additional intervention is needed to change maladaptive illness perceptions, coping strategies and interactions between workers and significant others, we advise occupational health physicians to refer workers and significant others to other health care providers such as a psychologist, social worker, or medical specialist [41–45].

Finally, we recommend occupational health physicians involved in the work re-integration process to complete the TOTIS e-learning module when it becomes broadly available, as this can help them to gain more knowledge on how significant others can influence work outcomes and how they can involve significant others to better support workers in their recovery and re-integration. In addition, the accompanying materials can provide occupational health physicians with practical tools that they can use to assess the influence of significant others and facilitate adaptive illness perceptions, return to work expectations and coping of workers and their significant others.

Implications and recommendations for employers

While this thesis focused on strengthening the supportive role of occupational health physicians, employers have a key role in creating the right conditions for occupational health physicians to pay attention to and address the influence of significant others. In the Netherlands, the employer is ultimately responsible for the proper guidance and re-integration of sick-listed workers. The possibility for occupational health physicians to pay attention to the influence of significant others and involve them in the re-integration process largely depends on the number of hours and the tasks for which the occupational health physician is contracted by the employer. Employers should therefore invest in creating the right conditions for significant other involvement in the re-integration process, for example by financing additional consultation time when it is necessary to pay attention to the role of significant others in a worker's re-integration. While this would initially be a higher financial investment

for employers, it may result in faster and more sustainable return to work of workers and could therefore save costs in the long-term.

Implications and recommendations for policy makers, professional associations and educational institutes

The findings of this thesis suggest that it could be beneficial to create more awareness about the influence of significant others on work participation of workers with chronic diseases and provide more guidance on how occupational health physicians can take the influence of significant others into account in the re-integration process. One way to achieve this would be to pay more attention to this topic in guidelines and education for occupational health physicians. Therefore, we advise professional associations like the Dutch Association of Occupational Medicine (NVAB), the Dutch Association for Insurance Medicine (NVVG), and the Dutch Association of Medical Advisers in Private Insurance (GAV) to convey to occupational health physicians as well as employers that this is a topic that needs attention, especially in the case of stagnation of re-integration or ineffective coping of workers. Furthermore, occupational health guidelines could specify situations in which further exploration of illness perceptions, return to work expectations and coping of workers and their significant others is recommended, and possibly point occupational health physicians to questionnaires or other tools that they can use in this context. For instance, based on the current findings, guidelines might advise occupational health physicians to target both workers and their significant others in case of maladaptive illness perceptions and when return to work expectations are markedly different from the expectations of the occupational health physician. Furthermore, we recommend the inclusion of the TOTIS e-learning module in continued education for occupational health physicians. Offering the TOTIS e-learning module to occupational health physicians can contribute to improving their knowledge, attitudes and self-efficacy with regard to involving significant others in the re-integration process and provide them with tools that they can use in this context. Considering the ease and low cost with which the e-learning module can be implemented, we believe that it would be worthwhile to broadly implement the e-learning module as continued medical education for occupational health physicians.

Recommendations for further research

This section provides several recommendations for further research on the subject of the influence of significant others on work outcomes of workers with chronic diseases and their involvement in the re-integration process.

The role of individual and interpersonal processes in work outcomes

Future research should further investigate which individual and interpersonal processes in dyads of workers and significant others play a role in work outcomes of workers with chronic

diseases. There is a need for more longitudinal studies on this topic as this could result in additional knowledge on which cognitive behavioral factors of workers and their significant others can be targeted to facilitate sustainable return to work. For that purpose, it is important that future studies include measures specifically on work-related support from significant others, for instance with respect to helping the worker to execute re-integration plans (e.g. dyadic planning) and encouraging or discouraging return to work. As to the best of our knowledge no instruments are currently available to measure work-related support from significant others, another important direction for future research is the development and validation of such instruments. Finally, more research using dyadic designs is needed as this can provide unique insights into the role of interpersonal processes in the context of return to work. When studying concepts in which interpersonal processes within dyads likely play an important role (e.g., cognitions, coping responses), collecting data from both individuals creates a more comprehensive view of the situation as both perspectives are taken into account. Dyadic designs and analyses explicitly acknowledge that such cognitions and responses do not occur in a vacuum, but within a dyadic context in which dyad members reciprocally influence each other [20,21]. An important advantage of using dyadic designs and analyses is that it allows researchers to study both individual and interpersonal associations while taking the interdependence between two individuals in a dyad into account [35]. However, researchers should take into account that recruiting dyads is more difficult and time consuming than recruiting individuals, and that there is an increased risk of nonresponse bias in dyadic research compared to research among individuals [46].

The effects of the e-learning module on occupational health physician behavior and worker outcomes

While we took an important first step in evaluating the TOTIS e-learning module in this thesis, our findings are limited to occupational health physicians' reactions to the e-learning module and the effects on their knowledge, attitudes and self-efficacy with regard to involving significant others. According to the evaluation framework outlined by Kirkpatrick, training programs can be evaluated at four levels: (i) reaction, (ii) learning, (iii) behavior, and (iv) results [47]. An important venue for future research is to evaluate the effects of the TOTIS e-learning module on the other two levels of this framework. More specifically, future research should determine whether the TOTIS e-learning module affects the behavior of occupational health physicians with respect to assessing the influence of significant others and involving them in the re-integration process. Likewise, future studies should investigate whether such behavioral changes among occupational health physicians result in improved outcomes among workers and their significant others. For instance, studies could investigate the effects of significant other involvement on the worker's recovery and re-integration outcomes as well as on satisfaction of workers and their significant others about the provided care, their illness perceptions, return to work expectations and coping behaviors.

Implementation of significant other involvement in occupational health care

In the current situation, decisions on whether to assess the influence of significant others and involve them in the re-integration process are probably strongly dependent upon the individual occupational health physician. Occupational health physicians in the Netherlands generally have a high workload due to a national shortage of occupational and insurance physicians, which can be an important barrier for them to assess the influence of significant others and involve them in the re-integration process. Especially when multiple factors seem to hinder return to work, time constraints may cause occupational health physicians to primarily focus on personal or work-related factors and pay no attention to factors in the worker's personal environment, including the role of significant others. Future research should further explore opportunities for occupational health physicians to refer workers and their significant others to other professionals (e.g. labor experts, job coaches, case managers, occupational psychologists, or occupational health nurses) providing support and guidance to help workers retain or return to work. For these professionals, the developed e-learning module could also be beneficial to gain more knowledge and further develop their skills with regard to involving significant others in occupational health care. Additional research is needed to determine whether adaptations in the e-learning module are needed to better align the content of the e-learning module with the specific roles of these professionals in the re-integration process and to better reflect their daily practice. A first step in this is taken in a recently funded project that aims to further develop and evaluate the e-learning module for labor experts.

General conclusion

The findings of this thesis potentially contribute to improvement of occupational health care aimed at supporting workers with chronic diseases in their return to work. This thesis adds an overview of evidence on individual and interpersonal factors of workers and their significant others that can influence work outcomes and identifies several factors that can be targeted to better support workers in their work re-integration process. An important finding is that occupational health physicians and workers indicate that significant others can play an important role in recovery and return to work. Occupational health physicians and workers recognize the potential benefits of involving significant others and pointed out challenges, risks and barriers. Furthermore, we found that not many occupational health physicians pay attention to the influence of significant others, and gained insight into the reasons for this. The TOTIS e-learning module, proven to be effective in improving knowledge, attitudes and self-efficacy of occupational health physicians, needs to be further evaluated to determine whether it affects the behavior of occupational health physicians with respect to assessing the influence of significant others and involving them in the re-integration process. Likewise, future studies should investigate whether such behavioral changes among occupational health physicians result in improved work outcomes among long-term sick-listed workers.

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