

Process Evaluation of a Motivational Interviewing Intervention in a Social Security Setting: A Qualitative Study among Work-Disabled Patients

I. Rymenans¹ · C. Vanovenberghe^{2,3} · M. Du Bois² · A. Van den Broeck^{1,4} · E. Lauwerier^{3,5}

Accepted: 16 February 2023 © The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

Abstract

Purpose Return to work (RTW) may be facilitated by motivational interviewing (MI), a counseling style designed to increase motivation towards behavior change. MI's relevance in a RTW context remains however unclear. Exploring how, for whom and in what circumstances MI works is therefore necessary. Methods Eighteen people (29-60 years; sick leave > 12 weeks) with low back pain (LBP) or medically unexplained symptoms (MUS) participated in a semi-structured interview after one MI consultation. We conducted a realist-informed process evaluation to explore MI's mechanisms of impact, its outcomes and how external factors may influence these. Data were coded using thematic analysis. *Results* Main mechanisms were supporting autonomy, communicating with empathy and respect, facilitating feelings of competence and focusing on RTW solutions instead of hindrances. Competence support was more salient among LBP patients, whereas MUS patients benefited more from empathy and understanding. External factors were mentioned to have impacted MI's effectiveness and/or the further RTW process, being personal (e.g. acceptance of the condition), work-related (e.g. supervisor support) and societal (e.g. possibility of gradual RTW). Conclusions These results stress the importance of self-determination theory's support for autonomy, relatedness and competence, together with a solution-focused approach when stimulating patients' engagement regarding RTW. These mechanisms' instalment during RTW counseling and their long-term impact depends on both personal and system-like external factors. Belgium's social security system's premise, based on control, might actually hinder RTW instead of facilitating it. Further longitudinal research could explore MI's long-term effects as well as its complex interaction with external factors.

Keywords Return to work · Counseling · Low back pain · Medically unexplained symptoms · Thematic analysis

I. Rymenans and C. Vanovenberghe have contributed equally to this work and should be both considered as first authors.

C. Vanovenberghe charlotte.vanovenberghe@kuleuven.be

> I. Rymenans isha.rymenans@kuleuven.be

M. Du Bois marc.dubois@kuleuven.be

A. Van den Broeck anja.vandenbroeck@kuleuven.be

E. Lauwerier emelien.lauwerier@ugent.be

Introduction

Work Disability and Return to Work

Work disability has become a widespread problem with impactful consequences for the individual and the work

- ¹ Department of Work and Organization Studies, KU Leuven, Brussels, Belgium
- ² Department of Public Health and Primary Care, KU Leuven, Leuven, Belgium
- ³ Department of Experimental-Clinical and Health Psychology, UGent, Ghent, Belgium
- ⁴ North-West University, Vanderbijlpark, South Africa
- ⁵ Department of Public Health and Primary Care, UGent, Ghent, Belgium

context, driving social security systems to their limits. In Europe the number of work-disabled people increased with 44% from 2006 (3.6 million) up till 2020 (5.2 million) [1]. In 2019 in Belgium, where the current study took place, about 10% of the active workforce (i.e. 447.867 people) was long-term work disabled (> 1 year absent from work). This involved a societal cost of roughly 8.5 billion euros in terms of sickness benefits alone [2] and is related to financial strain, emotional problems and social exclusion in workdisabled individuals [3, 4].

Musculoskeletal (MSK) conditions, i.e. disorders in the locomotor system characterized by reduced physical functioning and pain, represent one of the largest groups among the work-disabled patients [5, 6]. This group includes patients with the diagnosis of low back pain (LBP), but also represents an increasing group of patients who suffer from medically unexplained symptoms (MUS) such as fibromyalgia or chronic fatigue syndrome [7]. For both LBP and MUS patients return-to-work (RTW) may be difficult, since symptoms are typically long-lasting, causing longterm impairment from work. The longer people remain work-disabled, the more difficult RTW becomes [8].

RTW is a complex phenomenon resulting from a 'decision-making process that is influenced by behavioral concepts such as attitudes and self-management' [9, p.273]. From this perspective, motivation for RTW is crucial and can be defined as the driving force behind one's actions or the 'why' of behavior [10]. Motivation can be enhanced, for example through motivational interviewing (MI) [11]. MI is a patient-centered counseling style that focuses on promoting behavior change through conversational techniques. Below, we first elaborate on theoretical assumptions regarding the working mechanisms of MI, before going deeper into its potential use in a social security setting aiming at fostering RTW.

Motivational Interviewing (MI) and its Working Mechanisms

MI consists of four processes: engaging, focusing, evoking and planning. Practitioners first establish a trustful relationship with their patient. Next, they determine the focus of the consult (i.e. the desired behavior change) and through conversational techniques—such as affirmations, summaries and reflections—they evoke and reinforce patients' motivation. Finally practitioners guide the patient in coming up with a structured action plan [11].

MI has established its effectiveness in health care contexts such as substance abuse care and the promotion of physical activities [12, 13]. A key characteristic of MI is its directiveness to resolve ambivalence and guide patients to the desired behavior change [11]. For this reason, MI may be particularly useful in the context of work disability, as patients often feel highly ambivalent towards work resumption. They see the value of work, but at the same time they perceive thresholds regarding RTW in the context of disease and complaints. However, only few studies have investigated the relevance of MI in a context of work disability and RTW [14–16], and much remains unknown about how it exactly works in this context.

There are some presumptions about how MI works based on evidence from other contexts. There is the technical hypothesis suggesting that 'change talk' is key [17]. Patients talking out loud in favor of the desired behavior change is predictive of actual behavior change [18]. There is however more to MI that works, and in parallel to this technical hypothesis, there is also the relational hypothesis. This hypothesis states that behavior change may be promoted by the warm and engaging, interpersonal context of MI. Active listening, showing empathy and reassuring are then ought to be active ingredients [11]. The hypothesis that the relational aspects in MI promote change, is strongly in line with Self-Determination Theory's (SDT) concept of need support, which is explained in more detail below. SDT may provide a theoretical ground to the effectiveness of MI, as the latter has always been conceived more as a 'practice' rather than a grand theory itself [19].

Integrating MI with Self-Determination Theory (SDT)

SDT assumes that people are growth-oriented and that three basic psychological needs should be satisfied in order to create a supportive and stimulating environment [10]. First, the need for autonomy represents feelings of volition. Second, the need for relatedness refers to feeling connected with significant others. Finally, the need for competence stands for the ability to manage one's environment and learn new skills [20].

SDT and MI share some common ground. Both focus on internal reasons for behavior change, referred to as autonomous motivation. People who are autonomously motivated want to RTW because their job is interesting and fun (i.e. intrinsic motivation) or it gives them purpose and is in line with their values (i.e. identified regulation). In case of controlled motivation, people feel pressured to RTW. They for example experience financial strain (external regulation) or feel ashamed towards their environment (introjected regulation). Evidence from SDT suggests that people are more likely to experience autonomous motivation if their basic needs are satisfied, whereas frustration of these needs is linked to controlled motivation [10]. In line with SDT, previous research showed that work-disabled people who felt frustrated in their needs, expected the length of their sick leave to be longer [21]. Furthermore, patients in vocational rehabilitation who perceive their practitioners as

need supportive, are more likely to experience autonomous motivation and higher well-being. This in turn relates to increased engagement in physical activity and a higher chance of RTW [22].

MI might work through SDT principles, also in the context of work disability. Yet this is merely a hypothesis that still remains to be explored. Although SDT provides a theoretical base for MI [23], other working mechanisms may also prevail. Finally, other factors can be taken into account to fully assure whether an intervention works besides its theoretical presumptions alone. In the next section, the importance of context is introduced and main research questions of this study are given.

MI in a Social Security Setting: How and When Does it Work?

Apart from understanding whether MI works through the inner, individual processes as explained by SDT [10], also external factors may influence the RTW process and the effectiveness of RTW interventions [24]. External factors on a personal, a meso- and macro-level [25] are for instance personal factors (e.g. encounters with family and friends or personality traits), the work environment, interactions between patients and stakeholders such as health care practitioners, and the health insurance system [9, 24].

As part of an MI pilot trial [26], we set up a qualitative realist-informed approach to gain in-depth insight into 'what it is about MI that works, under what conditions, for whom and to what extent'. According to realist science, observed outcomes (O) of an intervention result from the mechanisms of impact or working ingredients underpinning an intervention (M), but are also shaped by the external factors (C) in which the intervention is embedded [27]. Realist science is used extensively in health services research, as it may help to outline the complexity of implementing interventions in such environments [28]. Even so, RTW issues are complex in nature and influenced by multiple determinants, being individual but also social and political. Disaggregating why, for whom and under which external conditions an MI intervention works, is necessary to fully grasp its potential. Using this C-M-O configuration from realist science, we explored the following in a subset of work-disabled patients who received MI in a social security setting:

- Which working mechanisms (M mechanisms of impact) that patients perceived as helpful in the MI intervention and how these relate to supposed outcomes (O - outcomes).
- (2) Which external factors outside of the consultations (C context) could be linked to the perceived effectiveness of the MI intervention. We were particularly interested

in how personal, meso- and macro-level factors related to the implementation of the MI intervention.

Methods

Design and Setting

We followed the Medical Research Council (MRC) process evaluation guidance for complex interventions [29]. The process evaluation was realist-informed as we looked into context (C), mechanisms of impact (M) and the perceived outcomes (O) [27]. Using a cross-sectional qualitative methodology, we evaluated an MI intervention that was part of a pilot randomized controlled trial (RCT) study in a social security setting [26]. The intervention consisted of one 15 min. consult in which MI was provided together with standard care. The MI intervention was delivered by a clinical psychologist from the public health insurance who has a certificate in MI. The parallel and single-blind RCT had an allocation ratio of 1:1 and compared patients who received MI plus standard care.

This MI intervention took place in the context of the social security system in Belgium, where there is a strong financial incentive to RTW. Sick-listed employees receive a guaranteed wage (100% covered) from their employer up to 4 weeks of absence. After this, the health insurance starts paying disability benefits, which entail 60% of employees' gross salary. People in work disability can be summoned at their health insurance in order to evaluate their RTW possibilities and eligibility for receiving benefits. When remaining work-disabled for longer than one year, the benefits range from only 40–65% of the gross salary, depending on people's living situation [30].

Sample and Recruitment

Participants were recruited through the initial sample of the abovementioned RCT study, in which the enrolment of patients took place based on their disability certificates at the health insurance. In order to gain sufficient homogeneity, only two diagnosis groups within a patient group with MSK conditions were included, being LBP and MUS. These diagnosis groups also contained the largest representation within the total group who received a consult from the MI-practitioner within the studied RCT sample from October till December 2019 (convenience sampling). We reached out to 38 of those work-disabled patients. Also, we excluded pregnant or unemployed people or those who were not fluent enough in Dutch. 19 out of 38 persons we contacted, agreed to participate (voluntary sampling). The others did not answer the phone call (11) or declined to participate (8) mainly because of time constraints.

Data Collection

We conducted semi-structured interviews based on an interview guide with open-ended questions. The interviews were-audio recorded and transcribed verbatim in order to conduct analyses afterwards. Following the aforementioned C-M-O configuration, we probed about the context (C), mechanisms (M) and outcomes (O) of the intervention [29]. We tried to make our wording as concrete as possible, which is needed to gain vivid experiences from participants. For example, to gain an understanding of the experienced mechanisms, we used wordings related to the psychological needs from SDT as probe questions. Context elements were probed against the personal, meso- and macro-level influences [25] and could relate to the private environment, work context, and the health insurance system among other factors. Outcomes related to feelings, cognitions and affect, but also to behavioral actions linked to RTW.

After piloting our interviews, we noticed that participants talked more freely about mechanisms of impact when probed with questions relating to SDT language (e.g., "Thinking back about the consultation, how did you experience the interaction with the practitioner?") linking back to the concept of relatedness). We however made sure to interview as broadly as possible and allow participants to give their own input, in order not to risk our results to be biased towards a specific theoretical frame. Therefore we also included 'open probes' such as "What during the past consultation did you experience as satisfying or dissatisfying?" (mechanisms of impact), "Could you tell me about what the consultation has brought you to think or do things differently?" (outcomes), or "Could you tell me more about how you anticipated the consultation?" (context). We included the following topics in the interview guide: anticipation of the consultation, experiences during the consultation, thoughts and actions and hindrances or facilitators afterwards.

Data Analysis

The research team consisted of 2 trained undergraduates (LV and PR) and 5 researchers (CV, IR, AVdB, MDB and EL) with expertise in MI (CV, IR, EL), SDT (IR, AVdB) and insurance medicine (MDB). The initial analysis sample consisted of 19 interviews as these patients volunteered to participate [31]. Data saturation was reached as the interviews that were coded last, revealed no new major themes. Therefore we chose not to conduct any additional interviews. We used thematic analysis, which is 'a method for identifying, analysing and reporting patterns (themes)

within data' and coded via NVivo 11 software [32, 33]. The coding process consisted of 6 different phases.

First, we familiarized with the data (phase 1) by reading the transcripts. LV and PR assigned initial codes (phase 2) to all utterances from the transcripts, supervised by CV and EL. During peer review meetings, a selected set of transcripts and coding was discussed. Based on these discussions, LV and PR progressed with coding next interviews. A code book was developed, which was further adapted throughout the analysis process (see supplementary material 1). As interviews with patients with LBP were generally conducted first, initial codes on these transcripts informed further data collection. As collection progressed, LV, PR, CV and EL defined broader themes out of the data (phase 3). C-M-O configuration was used as a broad anchor for clustering data codes into more abstract themes. While going back and forth through the interview data, themes were reviewed (phase 4), and in-depth patterns were identified. When defining and naming themes (phase 5), members of the research team (LV, PR, CV and EL) were inspired by existing frames and theories such as SDT. Theoretical concepts were used as latent variables helping to identify the broader, hidden patterns within the data. In-depth coding, reviewing, and defining and naming themes was performed in iterative phases, also involving perspectives of other members of the research team (IR, AVdB, MDB). IR and CV reported on the data (phase 6), providing in-depth description of the main themes and subthemes, linked to citations allowing for a thick description of the results. This reporting was supervised by EL, and further optimized through discussions with other senior research members (AVdB, MDB).

Validity and Reliability

The quality and trustworthiness of the data was guaranteed by peer debriefings, auditing with senior members, peer review and researcher triangulation throughout the entire process. All interviews were coded at least twice. Initial coding was performed by LV and PR, supervised by CV and EL. Next, through iterative coding phases, in-depth reviewing and categorizing of data, final results were obtained. The diversity of the research team was considered to be of added value, allowing for rich interpretation of the data and assuring quality of coding. The diverse expertise involved both methodological (EL), as well as theoretical and practical expertise, resulting from different roles (both undergraduate, PhD, as well as senior members) and backgrounds (psychology (LV, PR, CV and EL), work and organization studies (AVdB), insurance medicine (MDB) and health care sciences (IR)).

Participant	Age	Gender	Days absent	Diagnosis	Diagnosis group	Job category
1	35	Female	119	Hernia	LBP	Technicians and associate professionals
2	29	Female	117	Lumbago	LBP	Manual labor
3	29	Female	181	Hernia	LBP	Scientific personnel and teachers
4	61	Female	313	Lumbago	LBP	Scientific personnel and teachers
5	32	Female	111	Lumbago	LBP	Scientific personnel and teachers
6	48	Male	133	Hernia	LBP	Manual labor
7	35	Male	121	Sciatica	LBP	Manual labor
8	64	Female	163	Lumbago	LBP	Manual labor
9	40	Male	113	Cervical pain	LBP	Manual labor
10	40	Male	138	Hernia	LBP	Manual labor
11	60	Male	187	Sciatica	LBP	Manual labor
12	33	Female	127	Spasmophilia	MUS	Scientific personnel and teachers
13	35	Female	143	Spasmophilia	MUS	Service and sales
14	55	Female	180	Fibromyalgia	MUS	Manual labor
15	53	Female	187	Fibromyalgia	MUS	Service and sales
16	53	Female	498	Fibromyalgia	MUS	Service and sales
17	34	Female	130	Fibromyalgia	MUS	Scientific personnel and teachers
18	39	Female	95	Chronic fatigue	MUS	Scientific personnel and teachers
19	41	Female	273	Chronic fatigue	MUS	Clerical support worker

Table 1 Demographical and clinical information of the 19 interview participants

MUS Medically unexplained symptoms, LBP Low back pain

CV translated the quotations into English, which was checked by other team members.

Ethical Considerations

The study was approved by the Medical Ethics Committee of UZ Gent (2019/1248) and the Research Ethics Committee of KU/UZ Leuven (Belgian Registration Number B322201941009). The RCT study in which the MI intervention took place was also ethically approved and registered under the latter number [26]. The ID number for its ClinicalTrials.gov registration is NCT05412537. Participants in this study received an information letter, stating they had the right to stop the interview and their participation in the study at any time without consequences. They also were reassured that data would be processed and published anonymously. If willing to participate, they all signed an informed consent.

Results

Participants

Within our sample of 19 participants, 11 experienced low back pain (LBP) and 8 had medically unexplained symptoms (MUS) (Table 1). On average, participants were 43 years old and work disabled for 175 days. The interviews were held 10-129 days (average = 47) after the consult at the respondent's home and lasted between 20 and 72 min. (average = 50).

Interview Data

The results are organized into context (C), mechanisms (M) and outcomes (O) (see Fig. 1). In accordance with the visualization of the results in Fig. 1, we will first report on the perceived mechanisms of the MI consultation itself and supposed outcomes, before going into the external factors that may be of influence. Whenever available, links between C and M/O configurations are provided, in case this was explicitly mentioned by participants. Sometimes no explicit links between C and M/O were mentioned, but were nonetheless included as these external factors were brought up during the interview in relation to the consultation and therefore worth elaboration.

Because the interviews were held on average 47 days after the consultation, sometimes the participants could tell us about some small steps they already had taken in the meantime after receiving this consult. In the part about the working mechanisms and how they might be linked to supposed outcomes, we therefore differentiated between proximal outcomes (PO), which were said to immediately have resulted from the MI intervention, and



Fig. 1 A visual representation that links all the themes in the data based on the C-M-O configuration. It starts with the MI intervention and which working mechanisms (M) were reported to be helpful during these consults, followed by their supposed proximal (PO) or

distal outcomes (DO). Next external factors (C) are displayed. These represent all factors external to the MI intervention that may influence its effectiveness and therefore also might impact the further RTW process

distal outcomes (DO), which were reported sometime after the consult. Where relevant, we also differentiated between the experiences of LBP or MUS patients.

Working Mechanisms of the MI Intervention and their Link with Supposed Outcomes

The data revealed four main themes when asking the participants about the working mechanisms they perceived as most triggering during the MI intervention (see Fig. 1: 'Mechanisms'). Sub-mechanisms are indicated in italics in the text and mentioned in relation to supposed proximal (PO) or distal outcomes (DO) of the consultation. Behind each quote, the number of the participant who expressed this, is indicated.

The Need for Autonomy

Several participants appreciated that they were given *room for questions and to give their own input*, as they were asked about their opinion about RTW. This appeared to increase feelings of pleasantness and made them more aware that they had a choice (PO) and were respected in their autonomy (PO).

"She did say: "Look, I can only recommend it", but I think the final decision was still mine... I was aware that I was still free to choose." (14)

Furthermore, participants stated that *they were not directed or pressured towards work* as the practitioner said it was okay to think about themselves first and prioritize their complaints. This gave them the room to determine their own RTW pace (PO). When asked by the interviewer if the practitioner was understanding about the fact that working full time wasn't feasible yet, one participant answered:

"Yes, she said that I should listen to my body and that I must not overdo myself as this could lead to me dropping out completely again. It seemed like I could determine myself when and how I would fully return." (8)

The Need for Relatedness

Participants noticed the practitioner to *hear*, *listen and understand their story*. This made them feel supported and accepted (PO).

"I had the feeling that she understood me and how my situation was. Whereas if you don't feel understood, you don't feel supported" (15).

For patients diagnosed with MUS this basic understanding appeared to be even more important as they, compared to patients with LBP, talked a lot more about the challenges they faced and how their environment, for example family or health care practitioners, did not seem very compassionate.

"It made me a little emotional that somebody's listening anyway. Because most of the times I found no hearing with the doctors. They didn't seem to care that I said: "I'm still bothered, something's not right", but she did listen." (6)

It was also clear from the interviews that patients appreciated *empathy and compassion* from the practitioner, arising from the installation of an authentic bond. The empathy expressed by the practitioner was surprising to many participants, compared to earlier experiences. They expected a very authoritarian and controlling style. The discrepancy between these expectations and what actually occurred, brought positive feelings (PO) and made some participants feel greatly relieved afterwards (PO).

"She understood my point of view and showed real compassion... I told her how I feel, how my life is right now together with my new partner and my son from my ex-partner. I explained her my situation and she could really sympathize with me." (13)

Participants appreciated being seen as more than just an "incapacitated person" and *being treated as equals*. This made them feel respected (PO).

"What I remember most of all is that the vibe was positive, that it wasn't like "I'm a doctor and you're a patient and you have to listen", but that someone was genuinely listening (...) I felt mutual respect." (14)

The Need for Competence

The practitioner referred to other professionals or gave information about possible next steps that could help patients' RTW process. This *tailored and offering approach* led participants to feel encouraged (PO). In some instances it made participants think about some concrete next steps (PO), some of which were evident and easy to achieve, but not considered up to this point of mentioning.

"In the rehabilitation they advised to 'wait and see'. But if I want clarity I shouldn't wait and see. So the practitioner said "go for it" and in fact she's right.... Why shouldn't I just go to the doctor if I want more clarity?" (13)

One example is a participant talking about making an appointment with the occupational physician to discuss possible work adjustments. Ultimately this enabled the patient to self-manage and take charge of her own recovery and RTW process (DO). "I decided I want to go back to work and see how it goes. If it doesn't work out, then I will ask for a consultation with the occupational physician at work. Maybe it would be possible for me to transfer to a different unit where I can work half days, as right now I work as a nurse in a unit where I need to do full 8-h shifts." (18)

The practitioner provided positive feedback and reassurance, which relates to the sub-mechanism of *affirmation*. She expressed confidence in the participant's abilities and the decisions or steps they had already taken in terms of recovery or RTW. This strengthened their belief in themselves (PO) and the confidence that others would also support them (PO).

"It gave me a little more hope or something, or trust. A little more confidence in the decision I've made, actually." (4)

Patients with LBP talked more about the significance of the information and affirmation they received in the consultation, compared to MUS patients. Therefore these sub-mechanisms of competence support seemed more salient for them.

A number of participants valued that the practitioner *normalized* their situation, i.e. the process through which ideas are labeled as 'normal' instead of deviating. This was important as such, and also because this was stated in virtue of someone with expertise in the field. Some participants mentioned this gave them reassurance and the courage to persevere (PO).

"Well, she is not a doctor, but she knows her job and what she is doing. Yes, I had a good talk with her (...) She said: "You shouldn't worry about it. If your recovery takes longer, then it is longer. So be it. That's why you're with us." and that reassured me."—(10)

Solution-Focused Approach

The practitioner, together with the patient, actively explored possible solutions instead of elaborating on perceived problems and thresholds. In a way, this *approach characterized by a focus on solutions* helped patients to explore other options concerning work resumption (PO), which may lead to taking actual steps towards RTW (DO). For example, one patient explored the option of consulting the VDAB (i.e. an authority to help people find work) together with the practitioner and already took action sometime after the consult.

"No, I immediately went to the VDAB to get more information about that program. In that case I would

already have the form at hand, if I would feel ready to look for work again." (7)

Some participants mentioned this focus on solutions during the consult made them adopt more positive ways of coping with their problems and new experimenting (DO).

"From now on I will say more: "Whatever!" and I will go outside when I am having a good day. The last few months I have locked myself in the house too much." (18)

One participant stated that she indeed looked at things differently after the MI consultation. Although she experienced an increased readiness for taking steps (PO), she doubted whether this effect would be of long-term because she usually falls back into old habits quickly.

"Whenever I talk to the doctor and I go home afterwards, I always feel good and have the motivation to do things differently. But even after one day... I go right back to my usual routine." (3)

Furthermore, the practitioner *asked specific questions related to change* which seemed to facilitate patients to think about the future (PO).

"She asked me: "How do you see your future?" and that struck me like a bomb. I was like: "Wow, I really don't know actually..." I had thought about that, but nobody never explicitly asked me that question. It's different if someone asks." (5)

However, the current study also showed that some of the participants did not receive this kind of question, which was conceived as a missed opportunity. One participant testified that he would have found this question valuable if it were asked, and maybe even more in the beginning of his work disability period.

"No, and that was a shame maybe. Those are actually things that the health insurance may inform you about sooner. If you get the message that you will never be able anymore to do your job, and you're not even close to retirement, then that is something you must think about." (9)

External Factors Linked to the Effectiveness of the MI Intervention

During the interviews participants talked about factors external, but with reference to, the consultation they had (i.e. the MI intervention) and how it may have influenced the process thereafter (see Fig. 1: 'Context'). These can be grouped into three categories on different levels [25]: patient characteristics, personal environment (meso) and society and RTW policies (macro). These factors could work in two opposite ways simultaneously. On the one hand they were said to facilitate the supposed positive impact of the consult and/or the RTW process thereafter, on the other hand they were often found to be impeding this process. Below these external factors (C) are elaborated in relation to their linkages with either mechanisms (M) or outcomes (O) of the MI intervention. Also directionality (facilitating/impeding) of these external factors is given.

Patient Characteristics

Some participants described themselves as 'not being a quitter' and assumed their *resilient characteristics* to facilitate their RTW process, which helped them through difficult moments. Yet, this personal trait of being persistent also seemed to have a negative influence, as people felt guilty or felt like a failure for not working.

"I was always busy, 24/7, day in day out. And now sometimes the pain gets too heavy. Then I am even too tired to pick up my son and I feel like a failure. I feel very guilty about that. So I must go back to work, it's something that I impose on myself." (1)

Patients mentioned that focusing on the positive kept them going and talked about how *acceptance of their condition* was necessary for them to leave some things behind and move on. It could be a first step in the decision to RTW or to change jobs (PO).

"Yes, I think that if you feel good about yourself, you will get much further. I'm not saying now if there is something really medical, something that can't be fixed, but even then. Positive thinking does help you to rehabilitate, I think." (11)

Some participants reported *worries concerning RTW*. First, a social component of the fear of regaining professional activities was present, as patients reported to fear other's opinion. LBP patients mainly feared that going back to work would make the pain worse, which in turn increased their fear of relapse.

"Yes, I am afraid that I will have to give up again. I don't want to give up, that's why. (...) Yes, because I would really like to work but I am afraid of what a full day's work will bring." (3)

Among MUS patients fear was also present, but this rather took the form of not being believed or not being taken seriously by the practitioner.

"At some point I started thinking to myself: "Is it something between my ears?" Now I dare to come forward with it, but before I kept silent because yeah... there was nothing you could physically see about me. Whereas when your broken leg is in a plaster, people immediately understand that you're not able to walk very well." (16)

Some mentioned that this fear hindered their RTW process (DO), but it also seemed to shape their *expectations* of the consultation. MUS patients reported that they expected that they would have to defend themselves during the consultation and prove that they are really sick. This feeling seemed to be reinforced by their fear of not being believed.

"Well, I was a bit prepared because it said on the invitation that it was with the social security physician. I thought "I'm going to have to defend myself a bit here." (3)

Patients with LBP particularly expected to be forced back to work too early. This reinforced their fear of the pain worsening and therefore relapsing if they would RTW.

"I expected that it would be more of a push to get to work. But... it went different than I expected actually." (7)

"So I'm very afraid of dropping out again, I'm afraid of having such a bad week that it doesn't work out... and they're not going to understand that." (2)

It seemed that certain worries concerning RTW might not only have contributed to patients' expectations of the consult, but also the other way around, as these expectations were also said to reinforce for example fear of relapse in case of early RTW. Also, because of previous negative experiences, many participants expected not to be understood and to feel a certain distance between them and the practitioner. For some these negative expectations were readily corrected after the MI consult, which turned out to be positive. An MI approach was surprising to them, and it gave them the feeling of being calmer (PO). If in the future they would get summoned again at their health insurance to have a consultation, they will probably feel more at ease (PO), which in turn could facilitate the actual consultation then.

"It was a positive conversation. I did go out there with a really good feeling. Next time, if I'm sick for a long time and I have to go back for an evaluation, maybe I won't be scared anymore." (14)

In addition, particularly participants with MUS reported to be *sensitive to stress*. Consequently, not being able to go to work gave them the feeling of having more space (PO). This was beneficial for their recovery process (DO) since they believed that stress heavily affected their physical complaints. As some said, this perceived sensitivity lowered their readiness to go back to work, and possibly, this may have made them more resistant to change.

"In any way, being home is... having so much less pressure. The pressure of going to work, the pressure of coming home on time, preparing food and so on. Going back to work means getting back in a routine, with work pressure. Well... I don't have to deal with that now..." (16)

Personal Environment

Most participants mentioned they *experienced some kind of personal pressure* to go back to work. Due to financial strain they considered RTW (PO), and some even mentioned being pressured by their partner to go back to work. Experiencing this pressure brought about negative feelings (PO) which can hamper the RTW process (DO).

"I have to work and I have to make money. The money I receive now is two times nothing. It's just me and my two little kids... right now I need to use my savings to make ends meet." (5).

"My husband kept asking me when I would finally return to work again. But if I am not capable of it... I can't do magic." (1)

Having to take care of young children was said to be hindering, as they require lots of attention and therefore participants were being hampered to take sufficient care of themselves (PO). Especially patients with LBP found childcare physically challenging because of the lifting and picking them up.

"I think that is one of the reasons why my recovery is not going so smoothly compared to someone else. I still need to lift my kids and stuff. And then I make certain movements that I'm actually not allowed to yet and should rather avoid. But that's impossible to do..." (1)

Most participants indicated they felt *supported by their family and friends*. They did not mention this to have an influence on faster RTW itself, but rather on the general feeling of acceptance and well-being (PO).

"But there are also days when I just can't get ahead, and just someone saying: "How are you, did you have a good day, did you have a bad day?" that's important to me." (2)

The participants reported that other on-going *life events*, out of their control, heavily impacted their RTW process (for example a cancer diagnosis or major changes at home). These events became priority and hindered participants to think about RTW.

"I had surgery in February after I was diagnosed with cervical cancer, so it has been hard. You can imagine my back pain became less of an issue for me." (1) "I got sick when there were constructions going on at home, so I wasn't able to finish the floors upstairs. That was a very stressful period, as I also had to pass some performance tests at work around that time." (1)

Some participants expressed that having an adequate diagnosis was necessary for them to start treatment. Especially MUS patients mentioned going through this whole process of *searching for a diagnosis,* which slowed down their RTW process (DO).

"I think I will only be able to make the click in my head when I have my real diagnosis. Now all I can do is wait since the doctors say they're not 100% sure yet." (18)

A good atmosphere at work and support from colleagues or the employer were being missed by the participants. If the *contact with the work environment* was perceived as positive, this increased the readiness of participants for taking steps towards RTW (PO). In contrast, a lack of support at work hindered the communication between the sick-listed employee and the employer (PO), which in turn seemed to slow down the RTW process (DO).

"The atmosphere at work is amazing and that makes a difference. That was one of the reasons why I felt like getting back to work." (1)

"No one, including my team leader, has contacted me and asked if things are going well. That's just how they are... You are a number there." (17)

Adjustments at work differed from changes in the tasks people have to adjusted glasses, adapted working hours, attention for ergonomics etc. If there was the possibility at work to take some adjustments into account, this seemed to increase the willingness to RTW (PO). One participant mentioned that, after the consult at the health insurance, she decided to contact her occupational physician to discuss work adjustments if her return wouldn't go smoothly (DO).

"I decided I want to go back to work and see how it goes. If it doesn't work out, then I will ask for a consultation with the occupational physician at work." (18)

Society and RTW Policies

Participants indicated some negative aspects about the *operations at their health insurance*. A lot of administrative procedures are required to receive benefits. Together with a lack of information and communication, these were

perceived as thresholds that hampered them from focusing on their recovery instead (DO).

"In 1 week, I had to call 4 times and stop by the office 2 times. Eventually I ended up at my neighbor who works at my health insurance and she helped me with all the paperwork. And then they say you should rest and relax...." (12)

"I think they should cooperate more, the surgeons, the health insurance and the companies. The brochure of my health insurance says: reintegration to work happens in joint consultation... but in reality you have to figure everything out all by yourself." (6)

Participants also reported that the *possibility of gradual RTW* was helpful. The Belgian RTW policy allows workdisabled patients to gradually build up their working hours, allowing them to resume at a more comfortable pace. This seemed to lower the threshold for RTW (PO), especially for workers who had a physically or mentally demanding job. Notably, gradual RTW is also beneficial for employers as they don't have to pay guaranteed wage again if the employee relapses.

"I thought it was very positive that she suggested this half-time return to work. I hadn't thought about that yet and it certainly influenced my choice. That conversation made me feel more secure." (6)

Health insurance practitioners are often seen as the gatekeepers of the social security. The *controlling aspect* that is thus inherently present in this system, seemed to have a persistent influence on how work-disabled patients engaged in a consultation with their health insurance practitioner. This was also influenced by *beliefs in society* about the necessity to make an active contribution. Some participants mentioned that being work-disabled gave them the feeling of being stigmatized as opportunistic and lazy, which in turn made them feel ashamed (PO).

"Going to my health insurance was nerve-wrecking because you hear all these stories... Also my family members are farmers so there's only one thing that counts: working hard if you want to achieve something and no complaining. Now I have this chronic condition myself and I feel like I am also one of these lazy people." (8)

Discussion

We conducted a realist-informed process evaluation of an MI intervention to promote RTW in a social security setting. Through interviews with work-disabled patients who received an MI intervention, insights were gained on the working mechanisms (M) underlying its effectiveness. Participants also reported how these mechanisms contributed to supposed outcomes (O), both proximal (e.g. positive feelings after the consult) and distal (i.e. further steps or changes in the RTW process). Finally the data provided insights on external factors (C) that were reported to either negatively and/or positively influence the MI intervention, its effectiveness and/or the further RTW process.

Working Mechanisms of the MI Intervention and their Link with Supposed Outcomes

From the data four major themes emerged that were mentioned as possible working mechanisms of MI in a context of RTW. Three of them refer to SDT's basic needs, which is in line with the relational hypothesis about MI's working ingredients [17]. The final working mechanism seemed to relate to a solution-focused approach.

First, participants mentioned that their need for autonomy was satisfied by the practitioner leaving them room to give their own input and opinion, and allowing them to ask questions. Not feeling pressured gave them the chance to determine their own RTW pace. This was especially pleasant for LBP patients as they feared relapse and expected to be forced back to work. The relevance of autonomy is something that was not that specifically reported by participants from another qualitative study which analyzed the experience of Norwegian sick-listed workers with MI in the RTW process [34].

Providing understanding, empathy and equality seemed to satisfy patients' need for relatedness. Particularly MUS patients found this helpful, probably because there is no medical proof that can legitimize their complaints which makes their environment skeptical and maybe less compassionate. Patients were surprised by the practitioner's empathy as they did not expect to experience such an authentic bond, which was even more reinforced by the mutual respect that patients perceived. Given these positive experiences, our results show that a 15 min. MI intervention may have similar effects as two MI sessions of 60 min. each in a context of RTW, as reported in another study [34].

Lastly, the need for competence seemed to be supported through the provision of tailored information and affirmations, and normalizing patients' situation. Particularly information about gradual RTW was seen as valuable. This complements the results of Foldal et al., in which the importance of personalized feedback for adjusting RTW strategies was reported, together with normalization about patient's legitimacy for being work-disabled and therefore receiving benefits [34]. For our participants normalizing their RTW pace seemed more salient. Receiving affirmation and tailored information, e.g. in regard to gradual RTW or adjustments at work, appeared more salient for LBP patients. A possible explanation is that MUS patients were more in need of being heard, as their complaints tend to be minimalized more by their environment. On average LBP patients seemed to show a higher readiness for RTW, perhaps because they did not need to tackle people's skepticism or were in search for a diagnosis. Therefore they may have benefited more from these ways of competence support compared to MUS patients.

Notably, evidence on SDT in health care shows that providing autonomy support, conceptualized as 'acknowledging perspective, providing choice, responding to the other's initiations, providing relevant information and minimizing control' [35, p. 92], is a way to satisfy the need for autonomy, but also for competence and relatedness [36]. While SDT describes how autonomy support can be conceptualized, MI provides health care practitioners with conversational techniques that can be used to support patients' autonomy in a practical way [19, 23]. Providing autonomy support may compensate for the detrimental effects of social security's controlling nature, since autonomy is the opposite of control.

A fourth mechanism, solution-focused approach, related to exploring other RTW options and reflecting on possible changes in the future. It can be linked to Solution-Focused Brief Therapy (SFBT) [37], which suggests avoiding the language of talking about problems since it has an inhibiting effect, and to focus on solution talk instead. SFBT also builds on inner strengths of patients which is in line with both MI and SDT [10, 11]. Because of this common ground it could be interesting to integrate solution-focused counseling with principles from SDT and MI in a context of RTW.

Notably, participants mentioned that the consultation went different than they expected, which brought about positive feelings of understanding and acknowledgement. They for example expected to be controlled and forced back to work, instead they felt an authentic bond with the practitioner and were affirmed that their recovery pace is okay. This relates to the findings of Marcus and colleagues in which patients with generalized anxiety disorder also described that MI deviated from their initial expectations [38]. Perhaps the effectiveness of MI in a social security setting may be largely due to this discrepancy between negative expectations and reality, resulting in a strong 'contrast' effect, which already after a 15 min. consult seemed to promote positive outcomes.

External Factors Linked to the Effectiveness of the MI Intervention

Some factors external to the MI intervention were found to have a facilitating and/or hindering impact on its effectiveness and the further RTW process afterwards. At a personal level these consisted of characteristics that may either hinder or facilitate (motivation during) the RTW process [39], such as acceptance of the condition, the trait of resilience, sensitivity to stress and worries concerning RTW. LBP patients expected to be forced back to work which related to their fear of increased pain in case of RTW, potentially causing relapse. This relates to the concept of fear-avoidance behavior, i.e. when patients avoid certain activities as they believe this would drastically increase their pain, which is predictive of a longer period of work disability [40]. An intervention study showed that education and counseling on pain management and physical activity promotes faster RTW [41]. Thus practitioners could use MI to provide their patients with these insights and point at the possibility of gradual RTW to reduce fear of relapse.

MUS patients wanted to find a diagnosis first in order to receive adequate treatment, which hampers their readiness for RTW. This search for a diagnosis relates to their fear of not being believed by the practitioner, which made them adopt a defensive attitude during the consultation. To have a 'real' medical condition can be important for MUS patients to gain credibility from their environment, but also from society regarding the entitlement to receive benefits since an official diagnosis is a prerequisite [42]. This premise of the Belgian social security system creates a controlling environment, which contradicts the evidence from SDT that stresses the importance of an autonomy-supportive health care climate [36]. Referring to what has been mentioned before about how autonomy support may compensate for this controlling environment, the reversed relation may also be true as the effectiveness of MI and autonomy support may be partially countered by this. This remains yet to be explored.

Several external factors at a meso- or macro-level were found to influence patients' motivation and decisionmaking in the RTW process. Participants expressed that missing the good atmosphere or support at work, made them wanting to return. Also the work environment's flexibility about work adjustments was found positive. The literature confirms the positive influence of these factors relating to the work environment [39] and they could facilitate patients' autonomous motivation for RTW. In contrast, participants also mentioned experiencing pressure to go back to work, i.e. controlled motivation [10]. Internal pressure was caused by guilt or shame for being work-disabled, reinforced by societal beliefs on the necessity to actively contribute. Social norms regarding RTW can indeed determine patient's motivation for RTW [9]. External pressure for RTW manifested itself as financial strain or pressure from the partner. A previous study found that these types of controlled motivation can facilitate faster RTW [21], which contradicts empirical evidence from SDT in the context of work and health care [10]. This again shows how atypical the social security setting is, which is probably reinforced by its controlling nature. However, it is questionable whether this faster RTW due to controlled motivation leads to sustained RTW.

Life-changing events, such as a cancer diagnosis or construction works at home, were being prioritized by participants, which relucted them from thinking about possible steps towards RTW. Although the aim of a consultation with a health insurance practitioner is to discuss RTW, patients may not always have a request for help regarding RTW as they're being summoned there. Therefore it remains important to explore which goals or requests for help patients have, which is in line with the process of 'focusing' in MI [11]. Together with the follow-up of administrative procedures and the lack of communication and coordination between stakeholders, it seems that external factors on different levels can hinder work-disabled patients from focusing on their recovery and RTW process.

Practical and Theoretical Contributions

MI may help to tailor RTW counseling to the needs of particular groups (e.g. LBP versus MUS patients) and therefore facilitate RTW. Practitioners should take into account the external factors that may influence MI's effectiveness and the further RTW process, e.g. by discussing solutions for perceived thresholds in the consultation.

Although quantitative studies have already analyzed which working mechanisms of MI might contribute to its effectiveness [17, 43], only a few studies have investigated experiences with MI or its working mechanisms from a qualitative perspective [38, 44] and certainly in a context of RTW [34]. Our results show this is valuable since the health care context, in which the origins of MI lie [11], is quite different from a social security setting as explained before. Furthermore, we adopted a realist-informed approach and looked not only into the working mechanisms (M) of MI, but also into external factors (C) that may contribute to its effectiveness, its outcomes (O) and the further RTW process [27].

Limitations and Strengths

There are a few limitations to our study worth mentioning. First, on a methodological base, we experienced variation in timing of the interviews after the MI consultations across participants. Although subsequent exploration did not reveal differential data based on interview timing, we can never be sure how this might have impacted our results otherwise. For example, the longer the period between consultation and interview, the higher the chances of recall bias based on the experiences that follow the consultation. This might work either way: the more positive the RTW trajectory afterwards, the more positive the framing of the consultation might be, or vice versa. The positive aspect of having this variation in our sample was that some participants could then report on small steps they had already taken in the meantime, which is more unlikely to occur when only considering a more narrow time frame between consultations and interviews. Further qualitative approaches, including a longitudinal study design, should help to clarify this further.

This relates to a second limitation of our study, being the cross-sectional design which hinders us to draw causal conclusion regarding MI mechanisms and RTW. It is not easy to fully grasp this, also given the complexity of RTW processes. Insights in this matter could for example be enhanced by intervention studies in which mechanisms of impact are manipulated and short- and long-term effects are monitored afterwards.

Thirdly, our findings may not be representative of the overall population of work-disabled patients as we only included LBP and MUS patients. Furthermore, results are not applicable to social security systems outside of Belgium. Although generalizability is not the aim of a qualitative approach, exploration in other study samples (e.g. common mental disorders) and settings can be interesting to unravel transferable mechanisms of impact and external factors that are more imminent to tackle despite cultural variability.

Fourth, our results may be guided by certain theoretical frames (e.g. SDT). However, our approach allowed for vividness in reporting by participants, and validity and trustworthiness of data was ensured by our keen analysis process. Nevertheless, further exploration is needed. This also concerns the exploration of potential mechanisms of impact, which revealed in our study to be limited to relational mechanisms and not others (e.g., technical aspects of MI). However, technical mechanisms are rather difficult to verify when analyzing patients' experiences [17]. For this a quantitative design is more suited, e.g. analyzing patient-practitioner interactions through a validated coding instrument such as the Motivational Interviewing Treatment Integrity (MITI) code [45]. After all, our qualitative approach also implies a clear strength since it enabled us to gain in-depth insights on how working mechanisms and external factors might interact in relation to the effectiveness of MI in a RTW context. Also, the complementary knowledge and expertise within the research team was of added value given the complexity that is inherent to studying RTW processes.

Conclusions

A realist-informed process evaluation on the implementation of MI in a social security setting was conducted to explore how, for whom and under which circumstances MI seems to work. The main mechanisms of impact were found to be related to SDT's satisfaction of the need for autonomy, relatedness and competence. This approach was found positive and surprising to many participants as they expected to be forced and controlled. Providing autonomy support can enhance patients' need satisfaction and stimulate them to show higher engagement regarding their RTW process. Furthermore, autonomy support may be especially important in a social security setting because of its controlling nature, i.e. the reverse of autonomy. MUS patients rather stressed the importance of being understood and believed (i.e. relatedness support), whereas patients with LBP reported to benefit more from tailored information and affirmation (i.e. competence support). This information allows practitioners to tailor their consultations. A fourth mechanism of impact seemed to incorporate elements of solution-focused counseling, which enabled participants who felt stuck to explore other options regarding RTW and adapt more positive coping strategies. Also factors from outside the MI intervention seemed to influence its effectiveness and patients' further decision-making in the RTW process, e.g. personal characteristics, the work environment or RTW policies. The instalment of MI in a social security setting may differ based on how these factors, both on a personal and system-level, come into play in the RTW process. The influence of the complex interaction between these external factors and how their impeding impact may be tackled, remains to be fully disentangled in future research. Finally, studies with a longitudinal design could provide insights on the sustainability of MI's effectiveness.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s10926-023-10108-4.

Acknowledgements We want to thank the Industrial Research Fund of KU Leuven for providing funding for this study. We also would like to thank the Alliance of Christian Sickness Funds for their cooperation in the data collection as the interviewed participants were members of them. Phebe Raman and Lies Vankerckhove, Master students of UGent, also deserve mentioning as they conducted the semi-structured interviews with the participants and thus contributed to the data collection. Finally, we want to thank the participants for sharing their experiences with us.

Author Contributions CV, EL, AVdB and MDB: contributed to the conception of the study. CV: managed the data collection and EL: provided feedback on the interview guide and the data collection process. CV: conducted the data analysis with the undergraduate students, which was supervised by EL. IR: mainly contributed to reviewing the coding process, the reporting of the data and writing the

manuscript, together with CV. The manuscript was regularly revised and finally approved by the other co-authors.

Funding This work was supported and funded by the Industrial Research Fund of KU Leuven (Grant Nos. C2/20/050 and C3/20/050).

Data Availability The codebook which resulted from the data analysis process can be found in the supplementary material. Interview guide and interview data can be made available upon reasonable request by contacting the corresponding author.

Declarations

Conflict of interest The authors have no relevant conflicts of interest to disclose.

Ethical Approval The Medical Ethics Committee of UZ Gent (2019/1248) and the Research Ethics Committee of KU/UZ Leuven (Belgian registration number B322201941009) granted ethical approval for the conduct of this study. The ClinicalTrials.gov registration number of the RCT pilot trial regarding the MI intervention is NCT05412537.

Consent to Participate and Publish Interested participants received an information letter concerning their rights to look into their own interview data and also to stop the interview and/or enrolment in the study at any time without consequences. The letter also stated that their data would be processed and published anonymously, so that their privacy would be guaranteed. After reading this information, all participants signed an informed consent to agree with the data collection and analysis, and publication of the findings.

References

- Antczak E, Miszczyńska KM. Causes of sickness absenteeism in Europe—analysis from an intercountry and gender perspective. Int J Environ Res Public Health. 2021. https://doi.org/10.3390/ IJERPH182211823.
- RIZIV (2022) Statistics on the disability benefits in 2019, https://www.riziv.fgov.be/nl/statistieken/uitkeringen/2019/Pagin as/default.aspx Accessed 18 Nov 2022
- Henderson M, Glozier N, Elliott KH. Long term sickness absence. BMJ. 2005;330(7495):802–803.
- Black DC. Work, health and wellbeing. Saf Health Work. 2012;3(4):241–242. https://doi.org/10.5491/SHAW.2012.3.4. 241.
- OECD, (2015) "Fit mind, fit job: From evidence to practice in mental health and work," Paris https://doi.org/10.1787/97892 64228283-en
- Briggs AM, et al. Reducing the global burden of musculoskeletal conditions. Bull World Health Organ. 2018;96(5):366. https://doi. org/10.2471/BLT.17.204891.
- De Waal MWM, Arnold IA, Eekhof JAH, Van Hemert AM. Somatoform disorders in general practice: Prevalence, functional impairment and comorbidity with anxiety and depressive disorders. Br J Psychiatr. 2004;184(JUNE):470–476. https://doi. org/10.1192/bjp.184.6.470.
- Frank J, et al. Preventing disability from work-related low-back pain. New evidence gives new hope—if we can just get all the players onside. CMAJ. 1998;158(12):1625–1631.
- De Rijk A, Janssen N, Van Lierop B, Alexanderson K, Nijhuis F. A behavioral approach to RTW after sickness absence: The development of instruments for the assessment of motivational

determinants, motivation and key actors' attitudes. Work. 2009;33(3):273–285. https://doi.org/10.3233/WOR-2009-0875.

- 10. Deci EL, Ryan RM. The 'what' and 'why' of goal pursuits : Human needs and the self-determination of behavior. Psychol Inq. 2000;11(4):227–268. https://doi.org/10.1207/S15327965P L11104_01.
- 11. Miller WR, Rollnick S. Motivational interviewing. Helping people change., Third. New York: Guilford Publications; 2013.
- Lundahl BW, Kunz C, Brownell C, Tollefson D, Burke BL. A meta-analysis of motivational interviewing: Twenty-five years of empirical studies. Res Soc Work Pract. 2010;20(2):137–160. https://doi.org/10.1177/1049731509347850.
- Hettema J, Steele J, Miller WR. Motivational interviewing. Ann Rev Clin Psychol Ann Rev. 2005;1:91–111. https://doi.org/10. 1146/annurev.clinpsy.1.102803.143833.
- Park J, Esmail S, Rayani F, Norris CM, Gross DP. Motivational interviewing for workers with disabling musculoskeletal disorders: results of a cluster randomized control trial. J Occup Rehabil. 2018;28(2):252–264. https://doi.org/10.1007/s10926-017-9712-3.
- Gross DP, Park J, Rayani F, Norris CM, Esmail S. Motivational interviewing improves sustainable return to work in injured workers after rehabilitation: a cluster randomized controlled trial. Arch Phys Med Rehabil. 2017;98(12):2355–2363. https://doi.org/ 10.1016/j.apmr.2017.06.003.
- 16. Flodgren GM, Berg RC (2017) motivational interviewing as a method to facilitate return to work: a systematic review. Knowledge Centre for the Health Services at The Norwegian Institute of Public Health (NIPH)
- Magill M, et al. A meta-analysis of motivational interviewing process: technical, relational, and conditional process models of change. J Consult Clin Psychol. 2018;86(2):140–157. https://doi. org/10.1037/ccp0000250.
- Miller WR, Rollnick S. Talking oneself into change: Motivational interviewing, stages of change, and therapeutic process. J Cogn Psychother. 2004;18(4):299–308. https://doi.org/10.1891/jcop. 18.4.299.64003.
- Vansteenkiste M, Sheldon KM. There's nothing more practical than a good theory: Integrating motivational interviewing and self-determination theory. Br J Clin Psychol. 2006;45(1):63–82.
- Van den Broeck A, Ferris DL, Chang CH, Rosen CC. A review of self-determination theory's basic psychological needs at work. J Manage. 2016;42(5):1195–1229. https://doi.org/10.1177/01492 06316632058.
- Vanovenberghe C, Du Bois M, Lauwerier E, Van den Broeck A. Does motivation predict return to work? a longitudinal analysis. J Occup Health. 2021. https://doi.org/10.1002/1348-9585.12284.
- 22. Farholm A, Halvari H, Niemiec CP, Williams GC, Deci EL. Changes in return to work among patients in vocational rehabilitation: a self-determination theory perspective. Disabil Rehabil. 2017;39(20):2039–2046. https://doi.org/10.1080/09638 288.2016.1215559.
- 23. Vansteenkiste M, Williams GC, Resnicow K. Toward systematic integration between self-determination theory and motivational interviewing as examples of top-down and bottom-up intervention development: autonomy or volition as a fundamental theoretical principle. Int J Behav Nutr Phys Act. 2012;9(1):23. https://doi. org/10.1186/1479-5868-9-23.
- Loisel P, et al. Prevention of work disability due to musculoskeletal disorders: The challenge of implementing evidence. J Occup Rehabil. 2005;15(4):507–524. https://doi.org/ 10.1007/s10926-005-8031-2.
- 25. Bronfenbrenner U. The ecology of human development: experiments by nature and design. Cambridge: Harvard University Press; 1979.
- 26. Vanovenberghe C, Van den Broeck A, Du Bois M, De Schryver M, Lauwerier E. A pilot randomized controlled trial on motivational

interviewing in return to work after work disability. Patient Educ Couns. 2022. https://doi.org/10.1016/J.PEC.2022.09.014.

- Pawson R, Tilley N. An Introduction to Scientific Realist Evaluation. In: Chelimsky E, Shadish WR, editors. Evaluation for the 21st Century: A Handbook. Thousand Oaks: SAGE Publications Inc.; 1997. p. 405–418.
- Bonell C, Fletcher A, Morton M, Lorenc T, Moore L. Realist randomised controlled trials: a new approach to evaluating complex public health interventions. Soc Sci Med. 2012;75(12):2299–2306. https://doi.org/10.1016/J.SOCSCIMED. 2012.08.032.
- Moore GF, et al. Process evaluation of complex interventions: Medical Research Council guidance. BMJ. 2015. https://doi.org/ 10.1136/bmj.h1258.
- RIZIV, Calculation of the disability benefits as employee/ unemployed, (2023) https://www.riziv.fgov.be/nl/themas/arbei dsongeschiktheid/werknemers-werklozen/Paginas/berekeningarbeidsongeschiktheidsuitkering.aspx Accessed 20 Jan 2023
- Francis JJ, et al. What is an adequate sample size? Operationalising data saturation for theory-based interview studies. Psychol Health. 2009;25(10):1229–1245. https://doi.org/10.1080/0887044090 3194015.
- Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101. https://doi.org/10.1191/14780 88706qp063oa.
- Richards L. Using NVivo in Qualitative Research. London: SAGE Publications; 1999.
- 34. Foldal VS, et al. Sick-listed workers' experiences with motivational interviewing in the return to work process: a qualitative interview study. BMC Public Health. 2020. https:// doi.org/10.1186/s12889-020-8382-9.
- Williams GC, et al. Testing a self-determination theory intervention for motivating tobacco cessation: Supporting autonomy and competence in a clinical trial. Heal Psychol. 2006;25(1):91–101. https://doi.org/10.1037/0278-6133.25.1.91.
- Ng JYY, et al. Self-determination theory applied to health contexts: a meta-analysis. Perspect Psychol Sci. 2012;7(4):325– 340. https://doi.org/10.1177/1745691612447309.
- Bannink FP. Solution-focused brief therapy. J Contemp Psychother. 2007;37(2):87–94. https://doi.org/10.1007/S10879-006-9040-Y/METRICS.
- Marcus M, Westra H, Angus L, Kertes A. Client experiences of motivational interviewing for generalized anxiety disorder: a qualitative analysis. Psychother Res. 2011;21(4):447–461. https:// doi.org/10.1080/10503307.2011.578265.
- Heerkens Y, Engels J, Kuiper C, Van der Gulden J, Oostendorp R. The use of the ICF to describe work related factors influencing the health of employees. Disabil Rehabil. 2004;26(17):1060–1066. https://doi.org/10.1080/09638280410001703530.
- Masuy R, et al. Generalization of fear of movement-related pain and avoidance behavior as predictors of work resumption after back surgery: a study protocol for a prospective study (WABS). BMC Psychol. 2022;10(1):1–14. https://doi.org/10.1186/ S40359-022-00736-5.
- Godges JJ, Anger MA, Zimmerman G, Delitto A. Effects of education on return-to-work status for people with fear-avoidance beliefs and acute low back pain. Phys Ther. 2008;88(2):231–239. https://doi.org/10.2522/PTJ.20050121.
- Nettleton S. 'I just want permission to be ill': towards a sociology of medically unexplained symptoms. Soc Sci Med. 2006;62(5):1167–1178. https://doi.org/10.1016/J.SOCSCIMED. 2005.07.030.
- Frey AJ, et al. Mechanisms of motivational interviewing: a conceptual framework to guide practice and research. Prev Sci. 2020. https://doi.org/10.1007/S11121-020-01139-X.

- 44. Dobber J, et al. Active ingredients and mechanisms of change in motivational interviewing for medication adherence. A mixed methods study of patient-therapist interaction in patients with schizophrenia. Front Psychiatr. 2020;11:78. https://doi.org/10. 3389/FPSYT.2020.00078/BIBTEX.
- 45. Moyers TB, Rowell LN, Manuel JK, Ernst D, Houck JM. The Motivational Interviewing Treatment Integrity Code (MITI 4): rationale, preliminary reliability and validity. J Subst Abuse Treat. 2016;65:36–42. https://doi.org/10.1016/j.jsat.2016.01.001.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.