

Factors Influencing Post-Occupational-Injury Employment Trajectories of Nurses Aged 50+: A Life- Story Study Protocol

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Abstract

Background: The aging of the workforce, particularly among women aged 50 and over, is accompanied by an increase in workforce participation. In the healthcare sector, these aging workers are particularly vulnerable to occupational injuries, such as musculoskeletal disorders and burnout, which can lead to disability. The process of returning to work after an occupational injury is complex, as these workers have to choose between returning to work or opting for retirement. However, the factors determining their choice remain poorly documented, which limits interventions aimed at promoting their reintegration into the workplace or transition to retirement.

Objective: The aim of this study is to identify the factors that influence the employment trajectories nurses aged 50 and over after an occupational injury.

Methods: We will carry out this study in two complementary stages: stage 1- Qualitative life-story study: we will conduct semi-structured interviews with approximately 20 nurses aged 50 and over who have experienced an occupational injury. Through these interviews, we will explore factors related to various systems: the worker (e.g., health condition, perception of work); the work environment (e.g., demands, schedules); the healthcare system (e.g., accessibility to care, relationships with professionals); and the compensation system (e.g., insurance support). We will analyze the data using a thematic approach. This stage will generate recommendations to support both a smooth return to work and a successful transition to retirement for nurses. Stage 2 - Nominal group: we will organize a nominal group to validate the recommendations developed from Stage 1. We will recruit four groups of four participants, each representing one of the following systems: nurses, healthcare professionals, employers' representatives, and insurers' representatives. We will ask three questions to assess the relevance, clarity, and completeness of the recommendations. We will analyze the responses using descriptive statistics and qualitative content analysis.

Results: Data collection began in June 2025 and is expected to continue for 5 months.

Conclusions: Conclusion: The results of this study will make it possible to identify the facilitators and obstacles that influence the employment trajectories of nurses aged 50 and over following an occupational injury, and to formulate concrete recommendations to promote return to work or transition to retirement.

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Original Manuscript

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Introduction: The aging of the workforce, particularly among women aged 50 and over, is accompanied by an increase in workforce participation. In the healthcare sector, these aging workers are particularly vulnerable to occupational injuries, such as musculoskeletal disorders and burnout, which can lead to disability. The process of returning to work after an occupational injury is complex, as these workers have to choose between returning to work or opting for retirement. However, the factors determining their choice remain poorly documented, which limits interventions aimed at promoting their reintegration into the workplace or transition to retirement.

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Key words: Aging nurse, aging workers, employment trajectory, experts, elderly nurse, life story, professional trajectory, retirement, return to work,

Introduction

The health and social services sector is one of the largest employment sectors in the world, and is growing rapidly, particularly for women. Worldwide, women make up around 70% of the health and social services workforce, and account for almost 90% of the nursing and obstetrics workforce [1, 2]. In Canada in particular, almost 91% of regulated nurses are women [3], 21% of whom are aged 55 and over [4], a proportion that rises significantly. These aging workers are prone to occupational injuries of both a physical and mental nature. The most frequent physical injuries are musculoskeletal disorders such as low back pain, back pain and neck pain [5, 6], which result from excessive effort, repetitive movements, fast working rates and long static postures [7]. Numerous studies have shown that MSDs are accentuated in older female workers and represent an important category of occupational injuries observed in the healthcare sector [8-10]. In addition, elderly nurses can suffer sprains when handling patients, cuts caused by sharp objects [11], physical wounds and injuries caused by violence at work [5, 12-14]. Elderly nurses are also prone to psychological injuries, mainly due to the high demands of their working environment. Emotional fatigue is common among these nurses, exacerbated by the constant stress associated with their profession. [15, 16]. In fact, authors have shown that 30% of nursing professionals experience high levels of depersonalization, a dimension of burnout characterized by emotional detachment and negative, even cynical, attitudes towards patients. Additionally, 44% of nurses report low levels of personal fulfillment [17, 18]. These disorders can be exacerbated by atypical working hours, which have a negative effect on mental health and can lead to burnout, as shown by a study carried out in northern Thailand [19]. In addition, nurses faced with high psychological demands and low social support in the workplace report increased levels of emotional exhaustion [20]. What's more, a work climate in which nurses feel excluded and ignored by colleagues is an important cause of psychological distress among hospital nurses [21, 22].

These occupational injuries can lead to prolonged disability, with significant consequences in several areas [23-25]. At the societal level, the consequences are measured in terms of occupational injury costs, lost working days and income replacement compensation [7, 26-28]. On an organizational and collective level, we note the reorganization of teams, which can have an impact on work relations, and the reduction in productivity [23, 29, 30]. Finally, on an individual level, work-related injuries have serious consequences for the worker's health (e.g. poor psychological health, lower self-esteem, emotional distress, anger) [23, 31, 32].

Older individuals' employment trajectories after an occupational injury may include diverse options, such as returning to work or retiring. The return to work trajectory requires the coordination of

several stakeholders from various systems, such as employers, workers, healthcare professionals and insurers [33-35]. However, older workers may encounter obstacles in this trajectory, including difficult access to medical resources, negative stereotypes, low social support, as well as high demands related to the work environment [29, 33, 36, 37]. The retirement trajectory is also an issue, as many nurses aged 50 and over leave the profession before the traditional retirement age of 65 in Canada [4, 38]. This can be explained by various factors such as poor health, occupational injuries, and poor working conditions [39, 40]. To date, no study has looked specifically at the return to work trajectory of nurses aged 50 and over, despite their high prevalence of occupational injury. In addition, there is very little research on retirement after occupational injury among nurses aged 50 and over, underscoring the importance of conducting this study. The aim of this research is to identify the factors that influence the employment trajectories of nurses aged 50 and over following an occupational injury.

Theoretical Framework

In order to identify the factors influencing the employment trajectories of nurses aged 50 and over following an occupational injury, it is essential to draw on conceptual frameworks that provide a better understanding of the dynamics of the return to work and the transition to retirement. Two complementary approaches will be mobilized: the ecological model of work disability management and the person-environment fit theory. The combined use of these two models makes it possible to analyze both the influence of various systems (worker, work, health, insurance) and the alignment between nurses' individual characteristics and their work environment. This provides a more complete understanding of the obstacles and facilitators associated with employment trajectories after an occupational injury.

Ecological Model of Disability Management

The ecological model of disability management developed by Loisel et al. (2001, 2005), places the worker at the center of a set of four main systems involved in the return to work process after an occupational injury [41-43]. These are 1) the worker's personal system (personal dimensions of the worker that may be physical, social, cognitive and affective), 2) the health system that includes the interdisciplinary dimensions of care and the health professionals involved in the return to work process (such as physicians, occupational and physical therapists, psychologists), 3) the work system (co-workers, supervisors, unions) and, 4) the insurance system (compensation agents, rehabilitation counsellors, by-laws) [42, 43]. This model provides an ecological understanding of work disability by examining the different levels of the system. In addition, the attitudes and interactions of the

stakeholders in each system are important elements to consider in the return to work process [41]. This paradigm also encourages coordinated collaboration between the various systems and stakeholders involved, with the aim of preventing prolonged disability [43].

This model will guide the analysis of the return to work trajectory by identifying the facilitators and obstacles specific to the different systems involved in this process among nurses aged 50 and over following an occupational injury.

Person–Environment Fit Theory.

The Person-Environment Fit model has its origins in the work carried out by several researchers (Bakker, 1985; Caplan, Cobbs, French, Van Harrison & Pinneau, 1975; Van Harrison, 1978) in the 1980s [44, 45]. Person-environment fit is defined as the compatibility that occurs when an individual's personal characteristics and the characteristics of his or her environment in terms of values and goals match well [46-48]. The perception of a fit between an individual and the work environment contributes to organizational commitment and satisfaction, whereas a mismatch leads to physiological and behavioral stress (e.g., stress, dissatisfaction, burnout) [49-51]. In addition, a mismatch between the work environment (e.g., organizational culture, job requirements) and personal characteristics (e.g., well-being, state of health) encourages workers to leave the job [52]. In ageing workers, this perception of inadequacy may be linked to the decline in physical and cognitive abilities with age, which can make adaptation to work more difficult. Thus, if the work environment remains stable while their abilities decline, they are likely to consider retirement [53]. According to this model, job performance and satisfaction play an important role in the intention to retire [54].

We will adopt this model to document the personal factors, related to the worker's system (e.g., health status and well-being, family obligations) and environmental factors, either related to the work system (e.g., work demands, social support), the compensation system (e.g., disability pension) or the health system (e.g., accessibility to care), that prompt retirement after an occupational injury among nurses aged 50 and over. It will allow us to study how these factors interact and influence nurses' decision to take early retirement after an occupational injury.

Combining the Ecological Model of Disability Management and the Person–Environment Fit Theory provides a comprehensive lens to examine employment trajectories of nurses aged 50 and over following an occupational injury. Together, these frameworks help identify how systemic interactions and perceived mismatches between individual capacities and work environments influence both return-to-work and retirement decisions.

Methods

We will conduct this study in two main stages. First, we will begin by collecting the necessary data using a qualitative life-story research design. These data will then be analyzed to identify the factors influencing the employment trajectories for nurses aged 50 and over after an occupational injury. Following this, we will formulate recommendations to promote a smooth return to work and a successful transition to retirement for nurses aged 50 and over. Secondly, we will validate these recommendations by submitting them to stakeholder review.

Stage 1: Life Story

Design

This first stage of the study will be carried out using a qualitative life story research design [55]. Life story is an approach that allows the researcher to explore a person's personal history in an intimate way, in order to extract information relevant to a topic [56]. This method is useful in rehabilitation, as it gives the person the opportunity to share his or her own perception of his or her condition and journey [56]. There are two main forms: the biographical narrative, in which one person tells the story of another, and the autobiographical narrative, in which the individual tells his or her own story [57, 58]. In the present study, we have opted for the autobiographical narrative, defined as a personal narrative, written or oral, in which a person recounts the past events of his or her own life [59, 60]. According to Ledger et al. (2022), the most important aspect of the autobiographical life story lies in the expression of the person's individuality [58]. This type of life story is relevant for exploring the career paths of individuals in order to better understand the difficulties of insertion and integration into the workplace after an injury, which corresponds to the aim of this study [59]. The choice of the autobiographical life story is therefore justified by its ability to offer an in-depth understanding of the individual experiences of nurses aged 50 and over.

Participants

Inclusion Criteria

The first inclusion criteria for this study will be to be a nurse aged 50 and over. The choice of age is justified by the fact that elderly nurses represent a highly qualified and experienced component of the workforce [40]. Their experiences will provide us with data relevant to our research objective. The second inclusion criterion is to have suffered an occupational injury of a physical type (e.g., musculoskeletal disorders, injuries, wounds, contamination by bodily fluids) or mental type (e.g., psychological distress, burnout). Finally, the third will be to have retired after a work injury, or to have successfully returned to work after the work injury (with or without rehabilitation, in the same

job or in a different job).

Exclusion Criteria

The exclusion criteria will be to have retired or not to have returned to work for a reason unrelated to the employment injury.

Sample Size

The sample size for this study is estimated at around 20 nurses aged 50 and over, recruited from the public health sector. In qualitative research based on a theoretical approach, where conceptual categories are defined on the basis of existing theory, sample size is often determined by the number of interviews carried out, until what is known as “data saturation” is reached [61]. This refers to the point at which the information gathered becomes repetitive and no longer offers any new insights. By seeing similarities in the data, the researcher becomes empirically confident that a problem has been saturated [62]. This approach emphasizes data quality and depth, in line with the principles of qualitative research [63, 64]. In doing so, the number of participants in our study is determined by previous similar studies that reached data saturation after around 17 interviews [59, 65]. The complex nature of this study requires a diversity of experiences in order to identify the factors influencing employment trajectories, which justifies the need for a sufficiently varied sample [57, 66]. However, the number of participants may be adjusted during the course of the research, depending on the richness of the data collected or on whether saturation is reached [66, 67].

Recruitment

Participants will be recruited via a poster sent to professional nursing associations, unions and online discussion groups. The recruitment poster will contain relevant information about the study, inclusion criteria and contact details of the research team. Mixed sampling will be used: first by convenience, then purposively by selecting participants meeting the inclusion criteria, and finally through a snowball effect, by asking participants to recommend other eligible nurses [67, 68].

Procedure

The data collection procedure will begin with the completion of a brief online sociodemographic questionnaire. Participants will be asked to provide information such as age, gender, type of occupational injury, workplace, years of experience and so on. Following this, the data collection procedure will comprise two stages: 1) lifeline mapping and 2) interviews. Firstly, participants will be guided to organize their lifelines over a set period. Then, once the lifelines have been established, interviews will take place to explore the various themes linked to the worker, work, health and compensation systems.

Lifeline Mapping

The lifeline tool is used to initially structure the life story, helping participants to recall information more easily before the interview [66, 69]. It is a structured Word document that can be used to explore a person's history, as well as the factors that have had a positive or negative impact on their trajectory [70]. Used mainly in life-course approaches, lifelines encourage participants to reflect on their personal experiences, as well as on significant events (e.g., career change, work stoppage) that have occurred in their lives [71]. In this study, participants will have 30 minutes to individually structure their lifeline using a canvas provided in Word format. This document will include themes based on factors that influence return to work and retirement trajectories after an employment injury. Participants will be able to fill this document with important dates, changes experienced during their trajectory [59, 69] related to the following themes:

- General career information (e.g., reasons why the participant chose the nursing profession; previous occupations; any previous work stoppages; etc.)
- The type of work-related injury (e.g., physical or mental type)
- The worker's system (e.g., health condition; perception of work; family situation or involvement; etc.)
- The work system (e.g., work schedule; work demands; workload, social support; etc.)
- The health system (e.g., periods of absence from work due to a work-related health problem; accessibility of specialized care, relationship with health professionals; etc.)
- The compensation system (e.g., compensation process for a work-related injury; support received from insurance companies; etc.).

Interview

Once the lifelines have been traced, the participant will be asked to verbalize her story based on her lifelines during the interview. The themes of the interview guide will be defined in relation to the four systems developed in Loisel et al.'s ecological model of disability management (i.e., the worker, work, health and compensation systems) [42, 72], as well as to person-environment fit theory [45, 73] and relevant information from the literature. This interview guide will comprise four main themes. For example, for the work system: "What elements in your work environment influenced your return to work or your decision to retire after a work-related injury?" This guide will make it possible to explore aspects that the participant would not address spontaneously, and the researcher will adopt a learning posture towards her [59, 74]. It will also be pre-tested with two nurse participants meeting the inclusion and exclusion criteria, to assess the clarity and relevance of the questions asked.

The interview will be conducted using the life story approach, in which the researcher actively supports the participant, asking questions to deepen the elements evoked and reformulating to clarify the exchanges, without hindering the participant's subjective expression [57, 69]. The interaction between the researcher and the participant enables a better understanding of the complexity of individual experiences, while reconstructing the social influences on personal trajectories [59, 71].

There is no consensus on the number of meetings or the duration of life story interviews, which can vary from a single meeting to several [57, 59, 75]. A single meeting may be sufficient, as long as it allows the participant to share his or her experiences at his or her own pace, in depth, for a rich and detailed account [57]. In this study, interviews will be conducted face-to-face or online, recorded, and will last up to 90 minutes, following recommendations in the literature which suggest an ideal duration of one to two hours [57, 59, 66].

Analysis

Sociodemographic data collected through the online questionnaire will be analyzed using simple descriptive statistics. Subsequently, the interview data will be analyzed using a thematic analysis strategy based on the method of Braun and Clarke [76, 77], and the work of Terry and colleagues [78]. This method, commonly used in the healthcare field, is flexible and suitable for the analysis of several types of data, including interview data [78]. Before thematic analysis, sociodemographic data collected through the questionnaire will be analyzed using simple descriptive statistics. We will adopt a hybrid approach combining inductive and deductive analysis [79], with themes defined a priori (worker, work, health and insurance systems) and the possibility of generating new ones. This analysis will be carried out by three members of our research team. The participation of several researchers in the data analysis guarantees the credibility and richness of the results [80]. Moreover, collaboration between researchers with different profiles also enriches data interpretation [81].

The analysis will follow the six steps proposed by Braun and Clarke (2006). It begins with *familiarization with the data (step 1)*, including faithful transcription of the interviews, taking into account verbal and non-verbal elements [82], followed by repeated readings to identify initial ideas [78]. This is followed by *the generation of initial codes (step 2)*, in which significant codes are created from relevant extracts related to the research question, using Nvivo (version 15) [81, 83]. *The search for themes (step 3)* will consist of grouping codes into main themes and sub-themes, while exploring the relationships between them. A “miscellaneous” theme will be created to group codes that do not fit into the main themes [78, 84]. Subsequently, *the themes will be reviewed (step 4)*, to check their consistency with the coded data and with the data set as a whole [78]. *A definition and naming of themes (step 5)* will then clarify the specificities of each theme, with a view to

producing a coherent narrative analysis integrating the data extracts [76]. Finally, the last phase will be *the production of the report (step 6)*, which will include final editing with selection of illustrative extracts and a linking of the analysis to the research question and existing literature [77, 78].

The results of Stage 1 will enable us to propose recommendations for good practices to support return to work and retirement after an occupational injury, bases on the systems (worker, work, health, and compensation). In Stage 2, stakeholders will validate these recommendations.

Stage 2: Nominal Group

Design

The nominal group technique, developed in the 1960s by Delbecq and Van de Ven [Delbecq et Van de Ven 1971, cited in 85], is a structured method for improving group decision-making, used in various fields such as education, health, social services and public health [85-87]. This method promotes balanced participation and consensus, while avoiding confrontation within the group [87]. It is also recognized for its relevance in the development and validation of good practice recommendations in the healthcare field [88, 89], which is the objective of this study. The advantage of this method lies in the fact that it takes place in a single meeting, enabling the process to be completed in two hours or half a day [90, 91]. In addition, it takes into account all the ideas expressed, thus guaranteeing an inclusive and structured discussion [85].

Studies on consensus techniques often assess content validity, which is considered fundamental to judging the relevance and validity of elements [92]. This type of validity is based on subjective assessments of the clarity, relevance and completeness of the recommendations [89, 93, 94].

In this study, the clarity of recommendations will be defined by their comprehensible and concrete formulation, facilitating their implementation [95, 96]. In this study, relevance will be judged in terms of the suitability of the recommendations for the specific needs [93] of nurses aged 50 and over, and for the objective of promoting a good return to work and a successful transition to retirement after an occupational injury. Finally, comprehensiveness will be assessed by ensuring that the recommendations cover all essential aspects [93], including the work, worker, health and compensation systems.

We will use the nominal group technique to enable experts to evaluate these criteria and reach a consensus on recommendations for good practice. This approach will ensure that the recommendations are relevant, applicable, and adapted to the needs of nurses.

Participants

Participants are selected based on their expertise in the subject under study. They must have the

power to apply the results [85]. Considering stakeholders representing the worker, work, health and compensation systems, the inclusion criteria for this study will be:

- Be a nurse aged 50 or over, have suffered a work injury, have successfully returned to work (with or without rehabilitation) or have retired after a work injury. Their experience of the challenges associated with returning to work or transitioning to retirement will ensure that the proposed recommendations are adapted to their realities and meet their needs.
- Be a healthcare professional involved in the return to work process (e.g., physician, occupational therapist, psychologist, psychiatrist, physiotherapist, physical rehabilitation technician, etc.). The inclusion of healthcare professionals in consensus techniques such as the nominal group enriches the quality and application of recommendations in a variety of care settings [97].
- Be an employer representative in a healthcare organization. The involvement of employer representatives or supervisors is justified by the need to take account of organizational constraints in order to develop feasible recommendations.
- Be a representative of an insurer (e.g., rehabilitation or compensation counselors from an insurance organization, etc.). Rehabilitation counselors assess the needs of injured workers to recommend measures to promote their return to health and employment [98]. Their involvement will ensure that recommendations are realistic and consistent with the rehabilitation process.

Group size

Previous studies have shown that small groups, of 2 to 4 participants, are effective in generating ideas and enabling full participation [87, 99]. In this study, we will form 4 groups of 4 participants, according to the systems involved in the theoretical framework: four nurses aged 50 and over (worker system), four employer representatives (labor system), four healthcare professionals (healthcare system) and four insurer representatives (compensation system). Groups of this size will ensure a rich discussion while allowing each participant to contribute fully [100].

Participants Recruitment

Participants will be recruited via a poster sent to organizations and online discussion groups. Purposive sampling will be used to select experts meeting the inclusion criteria. Once participants have demonstrated their interest in taking part in the study, an e-mail will be sent to them to schedule the meeting. This e-mail will include a brief explanation of the nominal group method used, the list of recommendations made with the questions that will be asked, a link to a survey to collect their

availability, as well as information on the place, date and duration of the meeting [91, 101].

Procedure

Before the start of the nominal group meetings, participants will be invited to complete a short online sociodemographic questionnaire documenting information such as gender, profession, years of experience in their field and so on.

The time required to complete a nominal group varies according to the size of the group, the number of questions asked and the type of participants involved [87]. In general, nominal group participants take part in a face-to-face or online meeting, which usually lasts two hours [85, 87, 91, 102]. According to some authors, it takes half a day to complete a nominal group for two questions [90]. For others, it takes around two hours to process a question through the nominal group process [89]. In this study, validation of the recommendations with the experts will take place during two-hour meetings, held face-to-face or online, depending on the availability of participants. All information from the group discussion will be recorded using an audio device and recorded on paper, to ensure complete data collection and facilitate analysis [85].

The experts will be asked three questions to assess the clarity, relevance and completeness of the recommendations, in line with the content validity criteria [89]. However, in line with established practice [89, 102] and for reasons of time management, only the question of completeness will be dealt with through the complete process of the nominal group. Indeed, the criteria of clarity and relevance can be assessed individually via a scale [103], whereas completeness requires group interaction to generate new recommendations [89].

Step 1: Assessing the Clarity and Relevance of Recommendations

To assess the clarity and relevance of existing recommendations, experts will be asked two questions: “Do you agree with the relevance of the recommendation?” (Relevance); “Is the wording clear?” (Clarity) [89]. We will provide the experts with a sheet of the recommendations made following completion of Stage 1 of this research protocol. They will be asked to rate the clarity and relevance of each recommendation using a 4-point Likert scale. For example, for relevance: 1) this recommendation is not relevant, 2) this recommendation needs major revisions to be relevant, 3) this recommendation needs minor revisions to be relevant, 4) this recommendation is relevant [103]. Experts may also suggest reformulations or improvements, which will be recorded by the animator [85, 104], a member of the research team.

These two criteria will not be the subject of a group discussion, as an individual assessment is sufficient to judge the clarity and relevance of existing recommendations. This is in contrast to completeness, which requires group discussion to identify recommendations that may be missing

[89, 102].

Step 2: Assessing the Completeness of Recommendations

To assess completeness, we will ask participants: 1) “Are there any other recommendations that you feel are necessary or should be added ?” [89, 102]. This question will be addressed according to process of the nominal group, which includes: 1) silent idea generation; 2) idea sharing; 3) group discussion or clarification; and 4) voting and ranking [85, 87, 100].

1. **Silent idea generation:** Participants reflect individually on the question posed, jotting down their ideas without interaction. This takes around 10 to 20 minutes [85, 87]. The experts in this study will answer the question on the completeness of recommendations in 20 minutes.
2. **Sharing ideas:** Each participant shares his or her ideas in turn. Ideas are recorded verbatim by the moderator, without discussion. This guarantees equal participation and lasts up to 30 minutes [87, 89].
3. **Group discussion:** Participants clarify ideas, group similar ideas together and add suggestions. The animator ensures a thorough, neutral discussion, lasting 30 to 45 minutes [85, 87].
4. **Voting and ranking:** this step consists of prioritizing the recommendations recorded according to the question posed [85]. First, participants receive a ranking sheet where they are asked to indicate their main preferences among the recommendations they have generated within the group. Depending on the subject, the number of recommendations chosen may vary. The literature suggests ranking three [89] to five recommendations [100, 105]. Next, the animator should clarify the importance of assigning a number to each selected recommendation, with higher numbers indicating greater importance [105]. At this step, the participants in our study will receive a ranking sheet on which they will individually indicate their main preferences among the ideas generated. We will set the number of items to be ranked at five. Five indicates the most important idea, and one the least important. These numbers will be added up in real time within the different groups using a Microsoft Office Excel spreadsheet to produce a list of priority recommendations per group. This step takes around 10 minutes [89, 105].

Analysis

Sociodemographic data collected through the online questionnaire will be analyzed using simple descriptive statistics. According to the literature, nominal group data can be analyzed using both

qualitative and quantitative methods [85, 89]. Our nominal group data will be analyzed using descriptive statistics and qualitative content analysis [89, 101]. The analyses will be presented separately according to the two steps of data collection.

Step 1: Clarity and Relevance of Existing Recommendations

The relevance and clarity of existing recommendations will be determined quantitatively by the percentage of agreement [89]. Indeed, percentage of agreement is a method commonly used in studies to obtain consensus [106]. The threshold of agreement required to reach consensus varies from study to study, ranging from 55% to 100% [89, 103, 106]. Like Lecours (2020) [103], we will adopt a 75% threshold for percentage agreement. Thus, the rules for establishing consensus will be as follows: 1) if 75% of the experts award a score of 4 on the 4-point Likert scale to a recommendation, the latter will be considered to have reached consensus and will be maintained. 2) if 75% of the experts give a score of 1 on the 4-point Likert scale, the recommendation will be rejected. 3) recommendations with a majority of 2 or 3 scores on the 4-point Likert scale will be modified according to the experts' suggestions.

The qualitative data (suggestions for improvement) obtained from the answers to the two questions asked to the experts will be used to improve the clarity and relevance of the recommendations.

Step 2: Completeness of Recommendations

- Quantitative analysis within each group

To assess the relative importance of the new suggested recommendations (completeness), we will first conduct a quantitative analysis within each group [85, 89, 101]. All recommendations ranked in the top five by participants will be retained for analysis [101]. The weighted average score will be calculated within each group by adding up the points assigned to each recommendation (e.g., recommendation 1=5 points, recommendation 2=3 points, etc.) and dividing by the number of participants in the group. A higher score will indicate a higher level of preference within the group [89, 101].

- Qualitative comparison across groups

Next, a qualitative content analysis will be carried out based on the priority recommendations identified within each group. It will aim to compare proposals, identify similar ideas, and group them into broader categories and themes [89, 102], to avoid redundancy. This structuring will serve as the basis for consolidating the recommendations, with a view to the final quantitative analysis that will establish a list of priorities.

- Cross-group quantitative synthesis

Finally, a final quantitative analysis will be carried out by adding up the priority scores associated

with the grouped recommendations from each group [100]. This analysis will produce a final consolidated list of priority recommendations, reflecting the recommendations strongly supported by all stakeholder groups.

Ethical Considerations

This study received ethical approval from the ethics committee of the Université du Québec à Trois-Rivières (UQTR), Project CER-24-315-07.04, and will be conducted in accordance with the prescribed guidelines.

Results

Data collection began in June 2025 and is expected to continue for 5 months.

Discussion

Relevance and strengths

This study will provide a better understanding of the facilitators and obstacles influencing the return to work or the decision to retire among nurses aged 50 and over following an occupational injury. It will contribute to documenting the trajectories experienced by these professionals, in order to propose recommendations adapted to their realities, which are lacking in the literature and limit the interventions aimed at supporting them. These recommendations will aim not only to encourage a sustainable return to work, thereby helping to reduce the labour shortage and support the social participation of experienced nurses, but also to support an appropriate transition to retirement for those whose conditions do not allow a return to employment.

What sets this project apart is its use of life story and nominal group specifications, enabling us both to explore individual trajectories in depth, and to validate concrete, applicable recommendations with experts from various systems. The analysis of factors according to the four systems (worker, work, health, insurance) provides a comprehensive and structured view of the elements influencing return to work or retirement. In addition, this research is based on an interdisciplinary perspective, mobilizing experts from the clinical, organizational and insurance fields, which will strengthen the scope and feasibility of the recommendations. Finally, it sheds light on the needs of an often understudied population - elderly nurses - at a decisive moment in their professional careers.

Limitations

This study focuses exclusively on nurses aged 50 and over who have experienced a work-related injury in the Quebec (Canada) context, thereby limiting the scope of the results to this specific group

and setting. It highlights the particular experiences and needs of this population, without allowing generalization to other professions, regions, or professional contexts. In addition, since life stories are based on recollections, there is a risk of recall bias, especially if the occupational injury occurred several years ago.

Conclusion

In conclusion, this study aims to identify the systems-related factors that influence the return-to-work and retirement trajectories of nurses aged 50 and over after a work-related injury. The collection of life stories will enable us to understand nurses' perceptions of the influence of the worker, work, insurance and health systems on their career paths. In addition, the results of this study will contribute to formulating and validating useful recommendations for stakeholders in the various systems, to ensure a successful return to work, as well as a successful transition to retirement, for nurses who have suffered an occupational injury.

Diffusion plan

The results of this study will be disseminated through various means, including oral and poster presentations at scientific conferences. In addition, scientific articles will be submitted for publication in peer-reviewed journals.

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Contributions of the Authors

J.V.D.M. had the original idea for the project and wrote the entire protocol. A.L. made a significant intellectual contribution to the orientation of the project, guiding the conceptual and methodological reflections, and revised and validated the final content.

Conflicts of Interest

No conflict.

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