

## Article

# The Working Informal Caregiver Model: A Mixed Methods Approach to Explore Future Informal Caregiving by Working Caregivers

Eline E. Vos <sup>1</sup>, Henk B. M. Hilderink <sup>2</sup>, Simone R. de Bruin <sup>3</sup>, Allard J. van der Beek <sup>4</sup> and Karin I. Proper <sup>1,4,\*</sup>

<sup>1</sup> Center for Nutrition, Prevention and Health Services, National Institute for Public Health and the Environment, 3721 MA Bilthoven, The Netherlands; eline.vos.02@rivm.nl

<sup>2</sup> National Institute for Public Health and the Environment, 3721 MA Bilthoven, The Netherlands; henk.hilderink@rivm.nl

<sup>3</sup> Research Group Living Well with Dementia, Department of Health and Wellbeing, Campus 2, Windesheim University of Applied Sciences, P.O. Box 10090, 8000 GB Zwolle, The Netherlands; sr.de.bruin@windesheim.nl

<sup>4</sup> Department of Public and Occupational Health, Amsterdam Public Health Research Institute, Amsterdam UMC, Vrije Universiteit Amsterdam, 1081 BT Amsterdam, The Netherlands; a.vanderbeek@amsterdamumc.nl

\* Correspondence: karin.proper@rivm.nl

**Abstract:** A growing number of informal caregivers of older adults combine caregiving with a paid job, raising the question of whether they will be able to meet the increasing demand for informal care. The aims of our study are twofold: first, to describe the development of a model providing insight into the factors that play a role in the availability and provision of informal care by working caregivers of older adults, and second, to investigate which societal developments will impact the factors in the model, and thus the future availability of informal care by workers. A mixed-methods approach was applied to integrate evidence from academic and grey literature, with insights from experts through a Group Model Building exercise and a Delphi study. The resulting Working Informal Caregiver (WIC) model presents a range of individual, social and environmental factors that are related to working caregivers' ability and their willingness to engage in informal care. Experts foresee that future informal care will be impacted most by the increasing participation of women in the workforce, while changing household structures may diminish opportunities to share care tasks within their households or families. The WIC model can be used to gain better insight into the availability of informal care by workers, now and in the future.

**Keywords:** informal care; work; working caregivers; older adults; eldercare; conceptual model; framework; determinants; Delphi study



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## 1. Introduction

Many countries will face further aging of their societies in the coming decades. This is caused by the demographically large generation of Baby boomers, living to an older age than the generations before them [1]. An increased life expectancy, however, is associated with increased multimorbidity and frailty, which in turn is expected to affect the number of older persons with health and social care needs [2]. To mitigate pressure on formal care systems, policies in several European countries stimulate older people to live longer in their own homes and to receive care in their home settings [3]. This is generally also the preference of the older people themselves [4]. This implies, however, increased pressure on older people's informal networks. Yet, due to a further changing age structure, it is expected that there will be fewer available informal caregivers for older adults in the future [1].

Many informal caregivers combine their caregiving responsibilities with a paid job [5]. In the Netherlands, one in four people of working age is a working caregiver, of whom about 20 percent provide intensive care of at least 8 h of care every week [6]. In general, women

tend to provide more informal care than men [3]. Regarding caregiving tasks, women tend to focus more often on providing personal care, emotional support, and care coordination, while men help out more often with administrative tasks, chores, and transportation [7]. Due to growing work participation among women and rising retirement ages, the number of people who combine paid work with providing informal care is expected to increase in the future [8].

Providing informal care can have several benefits for the caregiver, such as emotional rewards and feelings of personal growth and satisfaction [9,10]. However, the cumulative load of combining one's paid job with taking care of an independently living older adult and other familial and social obligations can nevertheless be experienced as challenging [11–13]. Additional burden can stem from unsatisfactory collaboration and difficulties in coordination with other informal caregivers (e.g., family) or formal caregivers (e.g., health and social care professionals) [9,14]. Combining work and care tasks and the experience of burden may impact working caregivers' physical and mental health, and ultimately also the level of their engagement in informal care [11,15,16].

The future availability of informal caregivers and their capacity to meet older adults' increasing care needs is cause for growing societal concern. Future estimates of the availability of informal care are often deduced from sociodemographic determinants, such as a person's co-habitation status or marital status, or the ratio of the age group of 50- to 74-year-olds to those aged  $\geq 85$  years (i.e., oldest old-support ratio) [17–20]). However, these determinants are estimates of the *potential* of informal caregivers and do not necessarily correspond with the true *availability* of informal care and how much informal care is actually provided. Multiple factors on different societal levels influence workers' ability and willingness to engage in informal care—and thus the amount of informal care that is actually available [8,21–23].

A conceptual model mapping the multitude of factors that influence the ability and willingness to provide care can be helpful to provide more insight into the availability of informal care by workers, now and in the future. However, such a model is currently lacking. On the topic of caregiving, several conceptual models have been developed, focusing on different aspects of caregiving, such as the intention to provide informal care [8] and contributors to caregiver stress, burden, or burnout [24–27]. Thus far, work-related factors have received less attention [28,29]. A framework to better understand the combination of eldercare and work is proposed by Clancy et al. [30], but it does not include outcomes regarding the provision of and levels of engagement in informal care. Furthermore, previous conceptual models on caregiving are often solely based on empirical findings in studies. Yet, in the case of future predictions regarding multi-faceted phenomena such as caregiving, it may also be of added value to take into account the ideas, knowledge, and judgments of experts from different areas of expertise [31].

The aims of this article are twofold: first, to describe the development of a comprehensive conceptual model integrating the most important factors related to the availability and provision of informal care by caregivers who combine paid work with taking care of an older adult, and second, to provide more insight into which important societal developments (e.g., demographic, epidemiological, social-cultural, technological, political and economic developments) are expected to impact working caregivers' ability, willingness, and availability to provide care in the future.

## 2. Materials and Methods

### 2.1. The Context of the Dutch Long-Term Care System and Support for Informal Caregivers

As in other European countries, over the past years, the Netherlands has gone through some major reforms of long-term care and support, which have increasingly focused on enabling older people to live longer independently at home. With the introduction of the Long-term Care Act and the revised Social Support Act in 2015, several parts of long-term care were decentralized from the national government to municipalities. Reforms included residential care becoming only available for those with intensive care needs, while

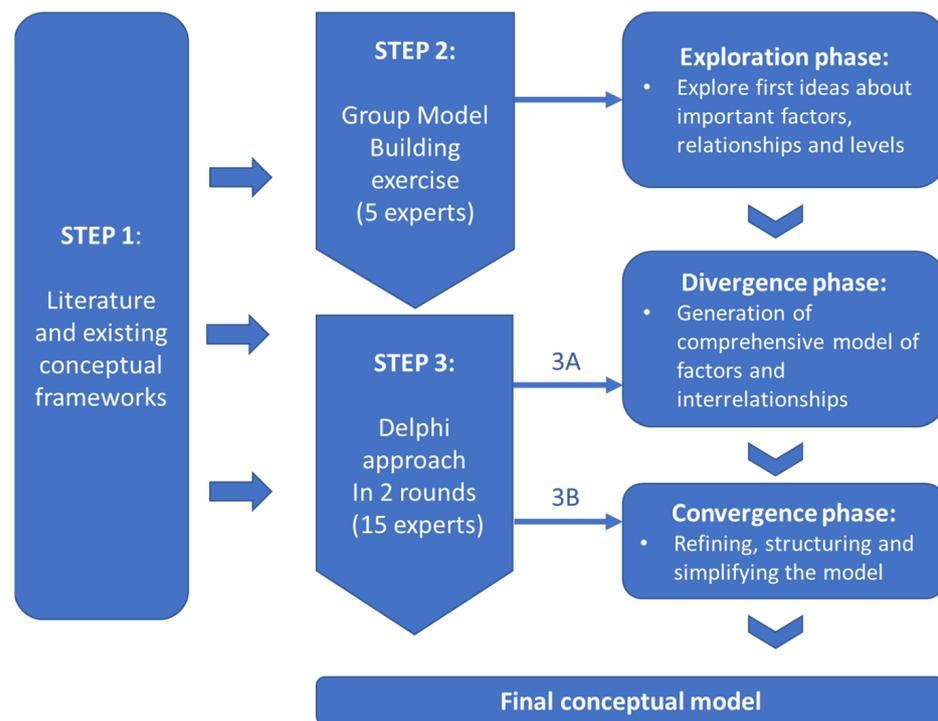
domestic care is only covered if it cannot be arranged through the care recipient's social network [32]. These changes were accompanied by a governmental discourse emphasizing civil responsibility to take care of one another before relying on formal care and support [8]. Still, around two-thirds of Dutch citizens hold the view that the government should be primarily responsible for the care for older adults with support needs and not the family [33]. The task of providing support to informal caregivers, such as respite care, information, advice, or material assistance, has been mainly assigned to local authorities. In addition, national policies have been introduced to better combine work and informal care, such as the Work and Care Act and the Flexible Work Act, to provide paid leave for caregivers and allow adjustments in the time and place of work [6].

## 2.2. Process of Developing the Working Informal Caregiver Model

For the development of the Working Informal Caregiver (WIC) model and the identification of important societal developments, we applied a mixed-methods approach. We combined insights from academic and grey literature with views of experts. Expert consultation was performed to collect, harmonize and weigh knowledge about contributors to informal caregiving across a wide range of disciplines [34]. Expert elicitation is seen as a way to access more "tacit" knowledge that may exist on multifactorial issues characterized by complexity or uncertainty [35]. Furthermore, the value of expert opinion has been particularly recognized when one is interested in future projections and foresight, which involves informed thinking about how different factors and broader societal developments may interact and develop in the future [31,36]. In this study, we consulted experts through different techniques: a Group Model Building exercise and a subsequent Delphi study. The Centre for Clinical Expertise of the Dutch National Institute of Public Health and the Environment reviewed the study protocol (VPZ-512) and designated that it did not fall under the scope of the Medical Research involving Human Subjects Act and was therefore exempt from further ethical review.

In order to design an initial model, Group Model Building (GMB) was used. GMB provides a structured way to actively involve different stakeholders in the design of a conceptual model, which facilitates a broadening of perspectives and increases ownership of the model [37]. The assumption is that in the case of complex and multi-faceted phenomena, no individual is able to overview the entire system of influential factors, but each stakeholder can complement the model from one's own experience and expertise [37,38]. To further build and discuss the model among a wider group of experts, we employed a Delphi study to collect informed judgments of an interdisciplinary group [34]. Many different types of Delphi approaches exist, but it traditionally involves multiple rounds in which the experts can anonymously reflect on and react to other viewpoints [39]. The aim of Delphi studies is not always to reach consensus [39]. In our study, we valued the opinions of experts on important factors but did not necessarily strive for consensus on the relative importance of included factors. The design process of the WIC model was carried out iteratively (Figure 1), meaning that elements were added and changes were made in a continuous learning process based on a combination of different resources: knowledge from the literature, expert feedback, and discussions within the research team.

The aim of step 1 and step 2 of the WIC model development was to explore first ideas for influential factors related to the provision of informal care by workers. Based on these insights, we created an initial conceptual model to be further refined and reflected on by a wider group of experts in step 3.



**Figure 1.** Development process of the Working Informal Caregiver Model.

#### Step 1: Literature review

Step 1 entailed a pragmatic literature review and summary of academic and grey literature regarding informal caregiving by workers and existing conceptual models on caregiving. Keywords in the search were ‘determinants’, ‘factors’, ‘informal care’, ‘caregiving’, ‘conceptual model’, and ‘framework’. Additionally, literature was searched to identify potential societal developments (e.g., demographic, epidemiological, social-cultural, technological, political, and economic developments) that may impact future availability of informal care. The initial model structure was guided by the ecological framework of Dahlgren and Whitehead [40]. This framework relates health outcomes to factors on multiple levels, i.e., individual factors, social capital, environmental conditions, and broader societal developments. We assumed that these levels also apply to factors related to informal care provision and burden. The structure of the model was further guided by the Informal Care Model (ICM) [8]. That model suggests that there is a distinction between factors influencing the *willingness* of caregivers to engage in informal care and factors influencing the *ability* of caregivers to actually provide care. Although the ICM uses willingness and ability factors to explain a caregiver’s *intention* to provide care (yes or no), we hypothesized that these factors also contribute to the amount of care that is actually provided (including the levels of engagement, such as frequency, duration and intensity of the given care) and potential caregiver burden. The amount of care and caregiver burden might ultimately also translate into the total available societal supply of informal care by workers.

#### Step 2: Group Model Building exercise

The aim of step 2 was to complement the factors identified in step 1 with those mentioned by experts and to explore the interrelationships between different factors and on which societal levels they occur. For this, we employed a Group Model Building (GMB) exercise. In the exercise, we used a facilitation technique commonly used in GMB: the creation of a causal loop diagram (CLD). In a CLD, stakeholders follow a scripted procedure guided by one or two neutral facilitators to map the key (causal) factors associated with the central problem [37]. In order to generate a CLD on the influencing factors of informal care provision by workers, five scientists from the Netherlands with expertise on informal

care, elderly care, occupational health, healthcare systems and health economics, and health modeling were invited to participate. Participants were asked to first individually brainstorm on the most important influencing factors of informal care provision. Starting with the outcome of 'informal care provided', the identified factors were then shared with the group one by one and added to the model. With each added factor, the participants were asked to also discuss and draw interrelationships (i.e., positive or negative influences) between the factor and the outcome and the other factors in the model. Once all factors on the participants' lists had been added, the factors were written on separate sticky notes. The last step was to classify the factors using a schematic overview of the societal levels that we derived from Dahlgren and Whitehead [40]: *individual (lifestyle) factors* (e.g., perceived health of caregiver; available time), *social capital* (e.g., social support from friends, families and at work), *environmental conditions* (e.g., availability of formal support) and *broader societal developments* (e.g., increasing retirement age; technological advancements in caregiver support).

Output from steps 1 and 2 was integrated to generate a first draft of the conceptual model, including the interrelationships between factors and how several societal developments interacted with the factors within the model and could, ultimately, influence the availability of informal care. For example, the development of an increasing retirement age could negatively impact the available time and perceived health of a (potential) working caregiver but may positively impact the supply of formal care that is available to assist informal caregivers.

### Step 3: Delphi study

In step 3, the initial conceptual model was further refined and discussed among a wider group of experts from different disciplines through a Delphi study. Furthermore, the Delphi study was used to obtain further insight into which of the identified societal developments in steps 1 and 2 will contribute most to future changes in the availability of informal care by workers. Experts were selected to represent different fields (academics, policy, and societal organizations concerned with working caregivers), disciplines (sociology and social sciences, health sciences, occupational health sciences), and salient topics (e.g., informal care, combining work and care, public and occupational health, health systems, technology, elderly care, and care organization). Twenty experts from the Netherlands were invited by e-mail, of whom 15 participated in our study. Informed consent was obtained from all participants. The experts were sent two questionnaires in April 2020 (round one) and in August 2020 (round two). Round one resulted in 14 completed questionnaires and one partly completed questionnaire. Round two resulted in 12 completed questionnaires.

#### Step 3A: Round 1 of the Delphi study

In Round 1, experts were asked to reflect on the conceptual model, to indicate which factors they found important, and to identify missing factors or interrelationships between determinants (divergence phase, Figure 1). Generally, experts considered many different (types of) factors as important; thus, no factors had to be removed from the model. Missing factors mainly concerned factors pertaining to the work environment, and it was suggested to provide them in more detail, which we incorporated by developing a subfigure for the next round of the Delphi. Other suggestions, for instance, pertained to adding the quality of collaboration and relations among (formal and informal) caregivers and the mental resilience of the caregiver. Finally, experts were asked to rank the list of societal developments (i.e., give a top 5) according to their possible impact on future provision and availability of informal care by workers. Experts were also asked to add and rank important societal developments that they thought were missing. Additions included the expected rise in self-employed caregivers, potential changing norms on family responsibility toward caring for older adults, and the impact of economic uncertainty on the willingness to provide care by workers. The results of the Delphi study were analyzed by two researchers, and proposed changes were discussed within the research team. An adjusted conceptual model was drafted, incorporating the received suggestions for adding missing factors and

reducing the complexity of the model. Thus, in this version of the model, we worked towards convergence and reduction of the model (Figure 1) by grouping similar factors and interrelationships together.

#### Step 3B: Round 2 of the Delphi study

In round two, experts were sent the adjusted model, including an overview of the most important changes to the previous version of the model and the combined ranking of societal developments of all respondents in the previous round. In an open question, we asked the respondents for their opinion about the completeness of the adapted version of the model and if they had any final amendments. Some changes were proposed, such as the classification of the work environment factors, which was altered to better match the categories in the WIC model. Furthermore, some factors were further specified or reconfigured (e.g., citing both private and public caregiver support and distinguishing between family and other care commitments).

Subsequently, we presented the results of the ranking of the most impactful societal developments related to the future availability of informal caregiving by workers. Because the rankings also contained societal developments added in round one, the respondents were asked to give a final top 5 ranking. This gave the respondents the chance to alter their ranking based on the importance given to certain developments by other experts. Based on the feedback in round two, we developed a final version of the conceptual model and ranking of influential societal developments. Thus, the final model was obtained by further simplification of the relationships between groups of factors. Furthermore, some changes were made in how the factors in the model were described and structured.

### 3. Results

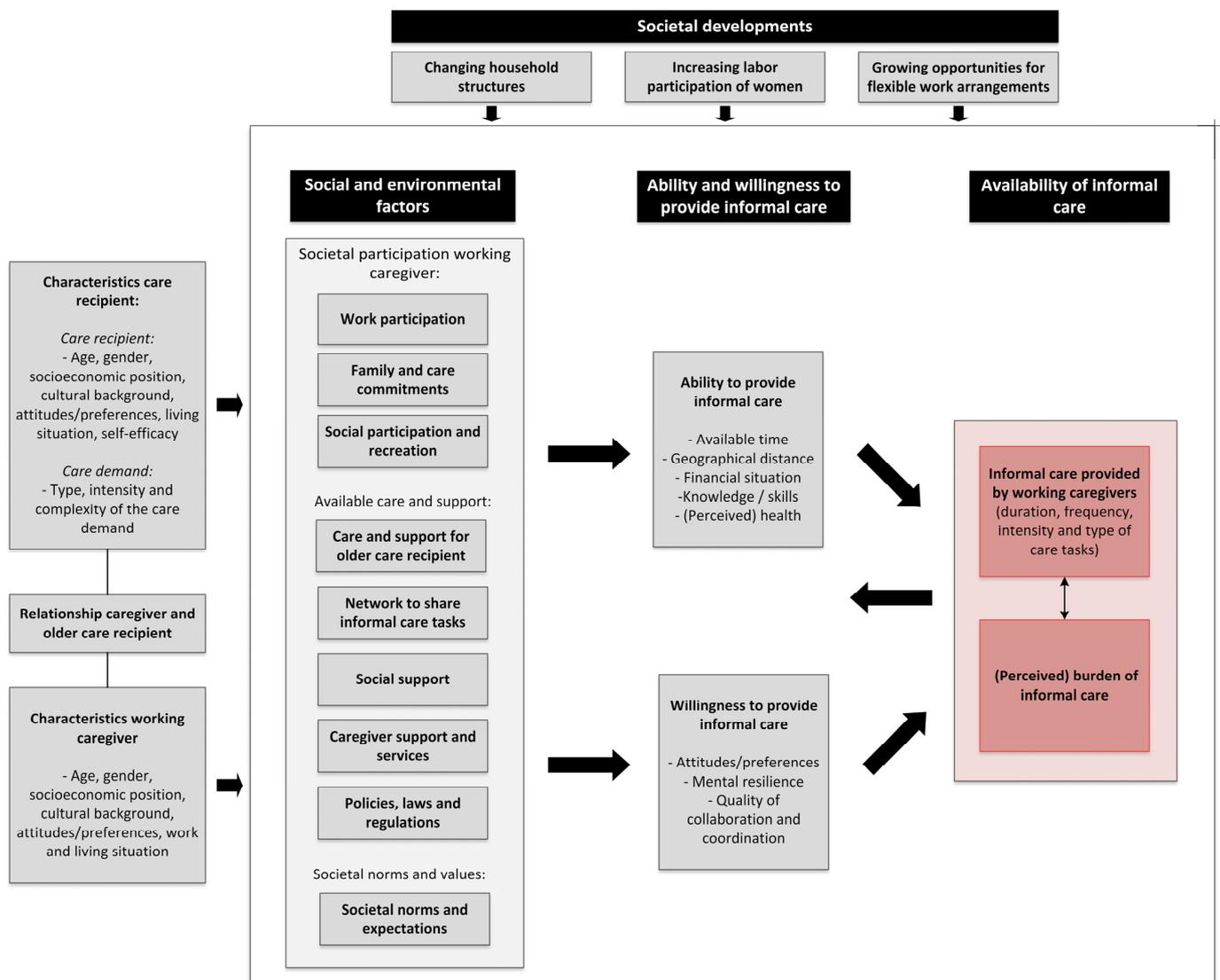
The final version of the Working Informal Caregiver (WIC) model is presented in Figure 2, and the description of all included factors is in Table 1.

**Table 1.** Factors in the Working Informal Caregiver model (Figure 2).

<b>Social and Environmental Factors (e.g., Social Environment, Family, Community, Work, Formal and Informal Care Environment, Policy Environment)</b>	
<i>Societal participation of working caregiver</i>	
Work participation	The employment status of the (intended) caregiver, such as position, contract type, work hours and work sector.
Family and care commitments	Other care tasks of the caregiver, such as family commitments or pre-existing informal care or volunteering tasks.
Social participation and recreation	Social and recreational activities of the caregiver, such as social visits, club activities, religious activities, sports and hobbies.
<i>Available care and support</i>	
Care and support for older care recipient	Available public, private, formal and informal amenities, care and (technological) support for the older care recipient, which can vary locally. Within formal care organizations, the attention paid to caregivers' roles is also important.
Network to share informal care tasks	Opportunities for the caregiver to share informal care tasks within his or her social network, family or with volunteers. This may depend on the size, composition, task distribution and quality of relationships within the social and family networks.
Social support	The (emotional) support and understanding that the caregiver receives from his or her social environment (family, friends), the care environment (other formal or informal caregivers), and work environment (employer, supervisor, colleagues).

**Table 1.** *Cont.*

Caregiver support and services	Available private and public caregiver support options in different settings, such as at home (e.g., technological support to assist in the care for the older adult, domestic help), in the community (e.g., respite care, support meetings), at work (e.g., flexible work arrangements, care leave, technological infrastructure to work from home) and in general (e.g., available information for caregivers).
Policies, laws and regulations	Policies, laws and (fiscal) regulations at the municipal, national or collective labor agreement level that may hinder or promote informal care by workers, such as care leave, entitlements to care and support for older adults, and the retirement age.
<i>Societal norms and values</i>	
Societal norms and expectations	Societal norms and expectations that may influence the extent to which a caregiver prefers, or feels 'obligated' to provide informal care (e.g., norms about gender and having a caring role, and about the responsibility of the state versus personal responsibility to provide support for older adults).
<b>Factors Related to Ability and Willingness to Provide Informal Care</b>	
<i>Ability to provide informal care</i>	
Available time	The available amount of time that could be spent on informal care according to the intended caregiver.
Geographical distance	The geographical distance and travel time between the (workplace of the) caregiver and the care recipient.
Financial situation	The caregiver's ability to bear the financial costs associated with the care tasks, to outsource certain care tasks (e.g., to private care), or to reduce working hours in order to provide informal care.
Knowledge/skills	Knowledge and skills that may help the caregiver to fulfil the informal care role, such as medical or digital skills, or knowledge about the care and support system.
(Perceived) health	The caregiver's assessment of his or her own health, based on the presence of health afflictions, but also lifestyle and psychosocial factors.
<i>Willingness to provide care</i>	
Attitudes/preferences	The extent to which the caregiver prefers to provide informal care, and how he or she feels about it, depending on the individual's motives, norms, values and on societal norms and expectations.
Mental resilience	The extent to which the caregiver is able to cope with challenges and changes related to the informal care situation, to adapt to it and maintain it.
Quality of collaboration and coordination	The quality of collaboration and coordination between the caregiver and the older care recipient, other informal caregivers, volunteers, or health and social care professionals.
<b>Availability Related Outcomes for the Working Caregiver</b>	
Informal care provided	The level of engagement in informal care provision by workers: duration, frequency and intensity of the provided care and the type of informal care tasks.
(Perceived) burden of informal care	The burden that is experienced by the caregiver due to the informal care tasks, determined by the objective burden (frequency, duration and intensity of care) and how the provision of care is perceived by the person itself. The experience of burden may influence the amount of provided care and the amount of time that a caregiver can maintain their caregiving role.



**Figure 2.** The Working Informal Caregiver (WIC) model.

### 3.1. Explanation of the WIC Model

The WIC model describes the social and environmental factors related to working caregivers' ability to provide informal care and willingness to engage in informal care. Willingness and ability are, in turn, related to two interrelated outcomes regarding working caregivers' availability: (1) the amount of informal care provided by workers and (2) the perceived burden of working caregivers. At the left side of the model, the demand for informal care is specified. The WIC model focuses on the care demands of older adults with health-related care needs within the immediate social setting of a caregiver who also has paid work [6]. The type, intensity, and complexity of the care tasks that are requested depend on the older adult's health status and characteristics (i.e., age, gender, socioeconomic position, cultural background, attitudes/preferences towards receiving both formal care and informal care, living situation and self-efficacy) [20,41–43]. Experts assessed the relationship between the older care recipient and informal caregiver as crucial for the amount of informal care a person will provide. The stronger the relationship between the care recipient and the caregiver, the more likely it is for the working caregiver to provide (more) care, also increasing the risk of becoming overburdened. Apart from the strength of the relationship with the older adult, the provision of care depends on working caregivers'

characteristics (i.e., age, gender, socioeconomic position, cultural background, attitudes, and preferences regarding informal care, work, and living situation) [8,21,44].

Regarding the outcomes of the model, experts underlined that when a need for informal care arises in the immediate social setting, the tendency is usually to provide the requested support. The amount of care provided may then more or less automatically increase with the amount of care requested. In practice, however, there are limits to the amount of care that persons can provide, given their own health, wellbeing, family, social and work responsibilities, and sometimes the geographical distance to the care recipient. Because more and more working caregivers may be feeling this squeeze in the future, experts found it important to also include working caregivers' perceived burden as an influence on their availability. Caregivers can experience burden in multiple contexts: in the home situation, in the care situation, or at work [27]. Experts emphasized that caregiving nonetheless can also have positive outcomes, for example, in terms of wellbeing and emotional rewards. Although the perceived burden is treated in this model as both an outcome and a factor influencing the actual provision of care, it is important to note that in practice, burden and the provision of care may also affect other factors in the model, such as a caregiver's health, work, societal participation, and the quality of the relationship with the care recipient [24]. These are dynamic relationships that may change during the caregiving trajectory. The feedback loop is represented in the WIC model by the backward-pointing arrow from the outcomes of the model.

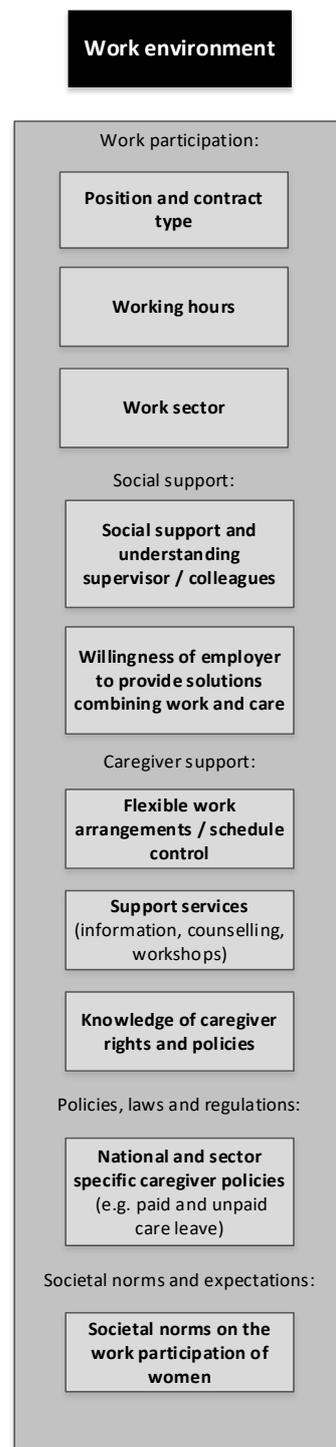
### 3.1.1. Social and Environmental Factors

According to the experts, many social and environmental factors from different settings (such as the work environment, community, social and family environment, local healthcare circumstances, national policies, et cetera) may influence caregivers' ability and willingness to provide informal care. Some factors related to the different roles and commitments that working caregivers may have apart from their caregiving role, captured in the cluster 'societal participation of the caregiver'. In particular, caregivers' family commitments and work commitments were seen as possible restricting factors to provide (more) help. At the same time, participation in other societal roles may also positively influence caregivers' perceived health and provide important skills, buffers, and coping abilities [29]. Experts stressed the role of available care and support in the environment of the older care recipient, which can decrease the demand for informal care in general or affect the specific type of informal care that is requested. Furthermore, the (perceived) availability of alternative care options for the older adult can influence the worker's willingness to provide care. Support for the caregiver can lower the threshold to start providing informal care, reduce the burden and facilitate the continuation of care. The WIC model differentiates between different types of support. Social support, seen as the understanding and emotional support that caregivers receive from their environments, provides an important buffer to counteract stress or challenges related to caregiving. Caregiver support and services refer to the available public or private support services for the working caregiver in different settings, such as the home environment (e.g., technological support to assist in the care for the older adult, domestic help), in the community (e.g., respite care, support meetings) or at work (e.g., flexible work arrangements, care leave).

#### Work-Related Environmental Factors in Detail

Experts and the literature mentioned various factors that pertained to the work environment [29,30,45–47]. In the additional Figure 3 (and the description of factors in Table 2), we provide a closer look at the underlying work-related factors of some of the environmental factors that were identified in Figure 2: *Work participation*, *Caregiver support*, *Policies, laws and regulations*, and *Societal norms and expectations*. For instance, the factor *Work participation* in Figure 2 is further differentiated in Figure 3 by the job conditions of the caregiver, such as their position and contract type (salaried or self-employed), their working hours, and in which company or sector they operate. Work-related caregiver support is separated by

the support options that are formally offered by employers or national and sector-specific policies (e.g., flexible work arrangements, paid or unpaid care leave), and the social support and understanding that is offered at work by supervisors and colleagues. To be able to make optimal use of available support options, knowledge of caregiver rights was added as a separate factor that is important for both employers and caregivers. Lastly, an example of a work-related societal norm that may influence the combination of paid work and informal care is the expectation that women should participate more in the workforce [48].



**Figure 3.** Work-related factors in the WIC model in detail.

**Table 2.** Influencing factors within the work environment, in the WIC model (Figure 3).

<b>Work Participation</b>	
Position and contract type	The job position and contract type of the caregiver (e.g., self-employed, salaried, flexible contract).
Working hours	The number of working hours per week.
Work sector	The work sector in which the caregiver works, including the existence of collective labor agreements with policies aimed at caregivers.
<b>Social Support at Work</b>	
Social support and understanding at work	The extent to which the caregiver feels safe to share his or her care situation, and feels (emotionally) supported and understood by the employer, supervisors and/or colleagues.
Employer's willingness to offer solutions combining work and care	The extent to which the employer, supervisors and/or colleagues are willing to find and offer solutions that help the caregiver combine work and care.
<b>Caregiver Support at Work</b>	
Flexible work arrangements and schedule control	Agreements between employer and caregiver to help the caregiver combine work and care, such as workload adaptations, schedule control, the ability to work outside the office and to choose their own working hours.
Support services	Support services provided by the employer, such as information for employed caregivers or supervisors, counselling, caregiver meetings or ICT support that enables working remotely.
Knowledge of caregiver rights and policies	The extent to which employers and employees are aware and knowledgeable of existing rights and policies for employed caregivers.
<b>Work Policies, Laws and Regulations</b>	
National and sector specific caregiver policies	The existence of policies and regulation for working caregivers at the national level or in collective labor agreements, such as the Work and Care Act, the retirement age or fiscal/tax regulations.
<b>Societal Norms and Expectations</b>	
Societal norms on the work participation of women	Changing norms and expectations, where women are increasingly expected to participate (more) in the workforce.

### 3.1.2. Ability and Willingness to Provide Care

The social and environmental factors in the WIC model influence working caregivers' ability to provide care and their willingness to engage in informal care. Factors related to ability are: *available time, geographical distance, financial situation, knowledge/skills, and (perceived) health* [8]. Factors related to willingness are: *attitudes to/preferences for informal care, mental resilience, and quality of collaboration and coordination* between the working caregiver and other (formal and informal) caregivers [9,14,25,49].

#### Ability Factors

Experts found the amount of available time of caregivers an important prerequisite for the ability to provide (more) care but underlined that more time does not necessarily mean that more informal care can or will be provided in practice. Depending on the attitudes and preferences of the caregiver, extra time could also be spent on any of the other participation factors included in the model, such as family commitments, paid work, or voluntary work. Experts also noted that geographical distance to the care recipient often translates into a

time-related factor, as it usually is the actual traveling time that restricts or facilitates the provision of informal care.

#### Willingness Factors

While the ability factors were not debated much among experts, the less tangible factors influencing willingness to provide care generated more discussion. Several experts mentioned that the willingness to provide care for a loved one is usually high, and, therefore, mainly mentioned ability factors as important restricting factors for the provision of care. Conversely, others emphasized the importance of willingness factors because even though the pressure to provide informal care can be high, “not everyone chooses it, for various reasons”. One could also differentiate between personal willingness to provide care and feelings of pressure to provide care, for example, from the family environment. Three main factors pertaining to willingness were included. Firstly, the willingness to provide care depends on personal preferences and attitudes towards the provision of informal care (i.e., individual beliefs and values). These personal preferences are also shaped by (external) societal norms and expectations, such as gender expectations regarding the caring role. Secondly, experts found it important to include factors related to collaboration between different stakeholders within the care network around the older adult. It regularly occurs that several persons, such as family/friends as well as other volunteers or formal care professionals, are involved in the care for an older adult [5]. The quality of collaboration and coordination between these different parties can play an important role in the burden that is experienced by the working caregiver. Thirdly, experts highlighted the potentially large individual differences between caregivers’ willingness to provide care and their perceived burden. Some caregivers seem to experience more burden than others, regardless of the (objective) amount of care provided. For example, it is known that working women, in general, tend to rapport a higher perceived burden than men [28]. In order to capture these individual psychological differences, the factor *mental resilience* was included, referring to a person’s individual ability to cope with the caregiving role, adapt to it, and maintain it.

#### 3.2. Impactful Societal Developments Influencing the Future Availability of Informal Care

An additional aim of this article was to have experts reflect on which societal developments will impact the identified willingness and ability factors in the model, and thus the future availability of informal care by workers (societal developments in Figure 2). Since societal developments may also influence each other, some developments can be seen as interrelated. However, for the purpose of the ranking exercise, the developments were presented separately. The exercise provided the top three impactful developments (Table 3). Experts foresee that future informal care by workers will be impacted the most by changing household structures, the increasing participation of women in the workforce, and growing opportunities for flexibility at work.

Households are becoming smaller as birth rates decline and there is an increase in the number of single-person households. As a result, on the one hand, opportunities for working caregivers to share informal care tasks within their households or families will diminish (factor ‘network to share informal care tasks’ in Figure 2). On the other hand, experts pointed towards the possibility that single-household caregivers may have more time for informal care since they have fewer family obligations (factors ‘available time’ and ‘family commitments’). Furthermore, according to experts, the rising labor participation rate among women will strongly impact the future availability of working caregivers. In the Netherlands, most informal care is given by women of working age [6]. Labor participation of women will increase, while participation for men is estimated to remain at the same level [50], which means that the pressure on female working caregivers will increase. Experts also noted this might have consequences for older adults who require more intensive care, as in general, women provide more (emotionally) intensive care tasks, such as psychological support and personal health, while men provide more practical support, such as administration and transportation [7]. Finally, experts foresaw an important positive impact on the availability

of working caregivers through increasing opportunities for flexibility in where, when, and how you work (factor ‘caregiver support’). Flexibility at work offers more room for non-work activities, including informal care. Apart from the positive influence on available time, increased flexibility can also benefit the work-life balance of caregivers, and through this help reduce perceived burden. The COVID-19 pandemic may have made flexible working hours and working from home more necessary and more common, but in some professions and industrial sectors (such as the healthcare sector, where the proportion of informal caregivers is relatively high) flexible work arrangements might remain difficult to realize [51,52].

**Table 3.** Societal developments with the most impact on the future availability and provision of informal care by working caregivers.

Rank	Societal Developments	Points *
1	Declining birth rates contribute to households becoming relatively smaller, and there is an increase in the number of single-person households. As a result, opportunities for (potential) caregivers to share care within their households or families diminish.	39
2	Rising workforce participation rates, in particular among women, result in more caregivers combining work and care	34
3	Growing flexibility for workers in some sectors in terms of contract types, schedule control, part-time work and options to work from home, increase working caregivers’ ability to provide care	26
4	A decline in the number of caregivers in relation to the number of older care recipients, due to demographic changes	16
5	Changing societal norms where people are increasingly expected to take on multiple societal roles at once (e.g., caregiving, volunteering, maintaining many social relationships)	15
6	Emerging innovations and increasing options in the public and private sector to support informal caregivers, such as technology or other services	12
7	The emergence of more complex family structures (e.g., blended families, divorces) may affect “obvious” care roles and responsibilities of potential caregivers, but increase care network size	8
7	Due to ongoing emancipation processes, gendered role expectations of women as “obvious” caregivers are expected to decrease, while for men, the negative image of caregiving roles also decreases	8
8	Rising retirement ages result in caregivers combining work and care for a longer time and until a higher age	6
8	Fluctuations in economy and labor markets create financial uncertainty which may impede informal caregivers from exchanging work for providing informal care	6
9	Changing norms about the responsibility of the immediate social environment to provide care to older adults with care needs	4
-	The education and prosperity level of the general population, and therefore also caregivers, continues to increase	0
-	The share of self-employed caregivers in the working population is increasing, which may help the combination of work and care	0

\* Points awarded based on the chosen rank of experts in round 2 of the Delphi study. Rank 1 (most influential development) = 5 points, rank 2 = 4 points, rank 3 = 3 points, rank 4 = 2 points, rank 5 = 1 point.

## 4. Discussion

### 4.1. The Added Value of the WIC Model

To the best of our knowledge, this is the first study integrating evidence from academic and grey literature, with insights from experts and using a combination of techniques (i.e.,

through Group Model Building and a Delphi approach) in order to design a conceptual model on the availability and provision of informal care by workers. With the resulting WIC model, we aim to increase our understanding of the potential tension between paid work and informal care by providing a comprehensive overview of aspects and elements that play a role in the availability of informal care. The model further extends current knowledge by putting the working caregiver at the center of the model and by incorporating in more detail pertinent work-related factors (i.e., work situation and working conditions, work resources, and company policy environment), which have received little attention in conceptual models about informal care, thus far [28,29]. Research has shown, however, that while caregivers may experience competing claims from work and informal caregiving, more participation in paid work does not necessarily lead to an equal decline in the provision of care [53,54], which points towards additional factors and mechanisms at play. The WIC model elucidates the importance of taking into account these factors, such as the caregivers' preferences, resilience, and experienced burden, as well as their social networks, work, and family situations.

To provide a more integral view of the factors and contexts involved, we have drawn upon multiple sources of knowledge and took an interdisciplinary approach. In the context of complexity and future uncertainty, solely relying on "hard" empirical evidence may be inadequate to identify all elements of importance and possible future directions [35]. For instance, most empirical studies on formal and informal care only focused on sociodemographic determinants at the individual level [20]. To strengthen the model and provide more insight into factors on other levels, we also relied on the insights of a group of interdisciplinary experts from academics, policy, and societal organizations. As a result, the model helps to better understand which societal and contextual factors play a role in the availability of informal care, such as factors regarding the quality of collaboration between (in)formal caregivers, as well as less tangible changing societal norms and expectations.

Apart from providing insights into the current availability of informal care, the WIC model also takes into account the dynamic nature of informal care provision and how the willingness and ability of working caregivers may evolve in the future. An additional aim of this article was, therefore, to obtain experts' judgments on which societal developments are expected to have the largest impact on the future availability of working caregivers. Experts thought that caregivers' availability would be restricted most by the increasing presence of women in the workforce, while the concurrent developments of smaller households and diminishing care share networks may result in additional pressure for those who provide informal care. At the same time, the increased availability of work resources such as flexible work arrangements can help mitigate these pressures.

#### *4.2. Applicability of the WIC Model*

The conceptual model and outcomes of the ranking of societal developments can be used to anticipate potential (future) challenges related to the availability and capacity of working caregivers to provide informal care. Although the model was developed within the Dutch setting, we believe that the factors in the model are also applicable to other countries' settings, taking into account possible differences in policies for long-term care and working caregivers. Regarding the most relevant societal developments, many other countries face similar situations in terms of an aging (working) population and pressures on formal health systems. Therefore, the results of the present study may also be relevant to other countries to investigate and respond in a more structured manner to societal challenges stemming from an aging population. Still, it could be beneficial to perform a similar study in other countries/contexts, to either compare or confirm our findings.

The model may also help to evaluate the effects of different societal developments, policies, and societal support aimed at working caregivers. In research, the WIC model can be used as a tool to guide hypothesis forming and further empirical research. Due to the complexity of the topic, the WIC model is not (yet) appropriate as a basis for prediction modeling, as there is still much uncertainty and contradictory evidence in the

literature about the interconnectedness between factors and their (sometimes nonlinear) interactions [21]. Future studies are recommended to further specify the relationships and the strengths of these relationships between the variables in the model.

Regarding possible leverage points for policy, the WIC model shows that the future supply of informal care is not just a question of the number of caregivers who are (in theory) available but also of how effectively working caregivers are able to maintain their different societal roles. In order to enhance the supply of informal care, policies should therefore also focus on improving *conditions* for those who (already) combine work and informal care. Support for working caregivers may help to decrease the burden and improve their quality of life, which may increase the likelihood that they can care better, more and longer [21]. Studies have shown that while a large group of caregivers often balances tasks well, around 10–20 percent of caregivers experience heavy burden and/or could use extra support [28,55]. The WIC model shows that support for working caregivers can be improved through formal services and policies, as well as informal support (e.g., social support, sharing care within the network). Experts viewed as a particularly positive development the increasing opportunities to work flexibly, for example, outside office hours or from home. However, this increase seems to be limited to higher educated professions such as knowledge work, meaning that lower educated caregivers benefit less from this trend [56]. At the same time, experts expected a decrease in the network of people with whom caregivers can share their informal care tasks as a result of changing family and household structures. This means that, in the future, the necessity for more formal support options to assist caregivers and care recipients with small personal networks may increase.

#### 4.3. Reflections on the Development Process

In this study, we employed a Group Model Building exercise and a Delphi study. Both methods created the opportunity to co-produce a multifactorial conceptual model with experts, but they also have some limitations. First, when one utilizes expert opinions, it is important to be aware of the diversity of the selection of participants since they play a large role in the outcome of the (model building) process [37,57]. Even so, conceptual models, in general, always remain a simplified representation of reality [58]. In this study, we aimed to achieve diversity by including representatives with diverse knowledge on the topic of work and informal care from academics, policy, and societal organizations/advocacy groups. This approach helped us to include important factors from different perspectives, but nevertheless, we should acknowledge that some factors/aspects may have been overlooked.

Second, although the methods provided a structured way to offer feedback on all elements of the model, the multitude of factors and interrelationships that needed to be reviewed by experts posed some challenges. For instance, in the first Delphi round, feedback was expected on a comprehensive model draft which also included the interrelationships between each of the factors. Some participants experienced this as quite intensive. However, the answers to the questionnaire yielded useful qualitative material and arguments; for future studies, we recommend limiting the amount of information to be reviewed, for example, by incorporating more feedback rounds.

Third, it is inherent to relying on an expert interpretation—especially in cases of future foresight—that the accuracy of the experts' contributions cannot always be verified [57]. The idea of co-producing a conceptual model is that each expert could contribute from his or her own (subjective) frame of reference, but participants were also asked to comment on factors and developments outside of their own expertise. One expert commented on the challenges his own subjectivity posed in the ranking exercise, which could influence the validity of the results according to this expert. However, expert elicitation was chosen precisely because future developments are, by definition, uncertain and can be judged from multiple points of view. The aggregated ranking of different experts' perspectives could therefore be used to obtain a more comprehensive and well-informed view on the matter.

## 5. Conclusions

The Working Informal Caregiver (WIC) model proposes a comprehensive framework, providing insight into the various individual, social, and environmental factors and societal developments playing a role in the availability and provision of informal care by working caregivers of older adults. By using a mixed-method approach, we aimed for a model supported by different expert groups. Based on this study, we conclude that the availability and provision of informal care will be particularly affected by changing household structures, the growing participation of women in the workforce, and increasing opportunities for flexibility at work. The WIC model can be used as a tool to better assess and understand the availability of informal care by workers, now and in the future. It may also help to provide insight into potential future challenges that may arise regarding informal care provision by workers and required policies to target these challenges. This makes the WIC model relevant for both research and policy.

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