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Public health and clinical approach to proactive management of frailty in multidimensional arena

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Parole chiave: Fragilità, gestione clinica, salute pubblica, EIPonAHA, assistenza personalizzata

Abstract

Background*. Demographic changes have forced communities and people themselves to reshape ageing concepts and approaches and try to develop actions towards active and healthy ageing. In this context, the European Commission launched different private-public partnerships to develop new solutions and answers on questions related to this topic. The European Innovation Partnership on Active and Healthy Ageing, including topic related action groups as well reference sites committed towards a common action to facilitate active and healthy ageing, has contributed key elements for interventions, scaled up best practices and evaluated impact of their action to drive innovation across many regions in Europe over the past years.*

Methods. *This paper describes action taken by A3 action group in the European Innovation Partnership on Active and Healthy Ageing. This paper gives an overview of how the partnership combined the view on frailty coming from public health as well as the clinical management.*

Results. *Within different European regions, to tackle frailty, EIPonAHA partners have conceptualized functional decline and frailty, making use of good practice models working well on community programs. The A3 Group of EIPonAHA has worked alongside a process of innovation, targeting all ageing citizens with the clear goal of involving communities in the preventive approach.*

Conclusion. *Engagement needs of older people with a focus on functionally rather than disease management as primary objective is considered as an overarching concept, also embracing adherence, compliance,*

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empowerment, health literacy, shared decision-making, and activation. Furthermore, training of staff working with ageing people across all sectors needs to be implemented and evaluated in future studies.

Introduction

In 2015, the World Health Organization (WHO) developed a consensus statement that promotes a new approach to ageing and resilience (1). In this context, the maintenance of intrinsic capacity and the ability of self-care has come into focus of care concepts for ageing citizens across the world in a life-long approach. "Frailty" as "work term" to express advancing loss of this intrinsic capacity is one trajectory of this new concept and has been taken up by political bodies, care planners and stakeholders involved in the management of ageing people, as well as societies, to describe populations at risk for adverse social, psychological, and medical outcomes. In this context, also the European Commission launched a call for action, supporting platforms on European levels, such as the European Innovation Partnership on Active and Healthy Ageing (EIPonAHA), European Union (EU) member-states initiatives such as the Joint Action on Frailty Prevention ADVANTAGE (2) and numerous EU-funded projects tackling different aspects of ageing and functional capacity, such as Sunfrail and PERSSILAA (3, 4).

Within the EIPonAHA, one action group - explicitly the A3 action group (5) - has streamlined its multinational collaboration towards actions on screening, assessment and bottom up management as a "strategy" to allow "aging in place". The strength of the consortium resides in its capacity in public health as well as in multidisciplinary and clinical competence. In this context the A3 action group has launched key deliverables such as an extraction of general policies across Europe for active and healthy ageing (6), overviews on frailty as a public health concept (7) and raised new frameworks coming from the collaboration between partners, such as a new food and nutrition model, the "Nutrilive Approach" (8). Throughout the years of collaboration, the group has started to build bridges between two worlds of clinical and bio-psychosocial public health management of older people at risk to develop frailty. Furthermore, the partnership in the A3 action group of EIPonAHA has come up with a comprehensive new concept of frailty management between clinical management and public health initiatives.

Aims and Methods

It is the aim of this paper to reflect upon the different perceptions and views on the topic of frailty coming from public health versus clinical management and recommendations and how to tackle these two multidimensional concepts, especially among ageing citizens across Europe. The work presented in this publication is not based on a literature review, but reflects the experience and personal opinion of stakeholders involved in the open consultation process within the A3 action group of the EIPonAHA here presented and does not necessarily reflect political intentions and views within official bodies of the European Union. The open consultation process includes the listening to experts and stakeholders involved in the issue that is the object of consultation

(9). The tool of performing a workshop to finalize the consultation process is largely used and allows profound insights. Usually they end with some statements that can be immediately used for planning services (10). In this case, more than statements, we preferred some closing remarks, because of the development of the debate on this issue.

Results

1. Results Definition and Concept of Frailty

1.1 Public Health definition of frailty and evolution of a concept

In general, public health efforts include planning, research and innovation on protection and improvement of community health by organized and structured efforts, including preventive medicine and sanitary and social science. In this context, also secondary and tertiary care prevention, including prevention of functional decline, disability and dependency, has become of major interest for stakeholders involved in care planning across Europe. Partners within EIPonAHA have conceptualized functional decline and frailty making use of good practice models or community programs working well within different European regions to tackle frailty (11). The partners have furthermore made an effort, to scale-up good practices in a "culturally sensitive" manner. All actions followed a structure putting citizens - instead of only "patients" - in the center of efforts in secondary and tertiary preventive care in a life-long approach. This new concept underlines statements recently released by WHO (12). In its report on ageing, WHO promotes the concept of ageing as the interaction between the individual intrinsic capacity and the environment, which explains most of the huge heterogeneity in the trajectories of functional ability and intrinsic capacity during all the life course. Creating health literacy among citizens across life span and sustaining environments (regional, social and health care) that support a view on functional wellbeing is therefore one of the major goals when developing systems for ageing communities. Thus, public health has adopted a definition of frailty that includes a variety of factors: "Frailty is a dynamic state affecting an individual who experiences losses in one or more domains of human functioning (physical, psychological, and social), which is caused by the influence of a range of variables and which increases the risk of adverse outcomes" (13). In general, it is the older people in community, who profit from an integrated, structured and goal-oriented approach. However, this concept of functional ability outlines the need for a future, "multisectoral" approach, prioritizing interventions that have been evaluated with positive results. Coming from this community-based approach, the A3 Group of EIPonAHA has worked alongside a process of innovation, targeting all ageing citizens (from robust to frail ones) with the clear goal of involving communities in the preventive approach, as well as attempting to adapt health and social care systems in European member states (6). Building ecosystems for active and healthy ageing targets the maintenance of health and functional capacities across lifespan and puts citizens to the center of community-based programs, aligned to support individual and overall capacity among citizens.

1.2 Clinical definition of frailty and evolution of concept of frailty

In 2002, Linda Fried, for the first time, conceptualized functionality for clinical practice publishing her definition of frailty. Ever since, different research and clinical groups have tried to align the concept of frailty (14) in clinical management of older patients. The Joint Action Advantage very

recently came up with a concept of core components to be included into the definition of frailty, independent of care setting (15). In clinical practice the concept of frailty still relies on deficit models rather than building capacity. Researchers have developed screening and assessment instruments for early detection of functional deficits that are coded to be able to distinguish between frailty and disability. There are currently plenty of test batteries available to analyze different domains of functionalities such as mobility, using gait speed (16), Short Physical Performance Battery (SPPB) (17), cognition (Mini Mental status Examination) (18) and nutrition (Mini Nutritional Assessment short form, MNA-sf) (19), just to name some of the domains. In daily clinical practice an approach based on target screening in offices and hospitals is followed by comprehensive geriatric assessment (CGA) to allow individualized and person-centred interventions (20).

Figure 1 illustrates the integrated care approach towards maintenance of individual resilience in a lifelong model, based on comprehensive geriatric assessment.

This evidence is based on an integrated care approach and allows a detailed analysis

Figure 1 - Integrated approach to promote balance between individual capacity, therapeutic goals and environment based upon CGA

of individual and complex care needs, as well as targeting the older person's needs. Stratification (fit, frail, disable, bedridden) allows complex care delivery in an integrated, tailored fashion as well as evaluation of efficacy and effectiveness of interventions using validated indicators in daily practice. In this context, CGA has been proven effective in hospital care for mortality and resubmission to hospital following discharge from acute care (21). Furthermore, this approach allows monitoring of quality of complex care also benchmarking in between institutions and systems (22). More and more, internet communication technologies have been used as carriers and providers for comprehensive geriatric assessment to support an easy access and integration with other clinical, laboratory, radiological and other data obtained from patients in hospital care settings. At the moment, these systems are local or regional technological solutions to facilitate physicians' work in daily practice and therefore do not allow to integrate machine learning tasks to further develop the concept of frailty for older people on clinical level.

CGA is followed by a detailed intervention plan, which focusses on building intrinsic capacity on domains detected as important for the individual therapeutic goals as determined by shared decision making with older patients (23). This allows inclusion of advanced care planning and personalized care in an integrated way. Furthermore, CGA is used as monitoring instrument in this clinical process (24). In general, on clinical level, it is the "older patients", who profit from this structured and goal-oriented approach.

2. Silos as barrier for lifelong prevention of frailty?

As described, frailty as a syndrome has attracted the attention of both the medical and scientific communities, and of public

health in numerous countries (25). In public health the topic is usually made visible using epidemiological data from community, also including a bulk of social aspects as well as gender and equality (26). In many EU member states, data in public health are collected in national or regional databases and some of those grounded upon self-determined ratings from citizens (27) rather than quantitative data collected during structured screening programs. The main focus of national epidemiological data available lays on "deficits and disability". Furthermore, the "static picture" in cross sectional analysis currently does not leave space to learn about dynamics of intrinsic capacity of ageing citizens in community. In some countries in Europe, primarily countries provided with a National Healthcare Systems, those databases sometimes include information on individual functional assessments collected in primary care by General Practitioners (GPs) and other kinds of Medical Doctors (MDs).

Community programs in public health are often separated from clinical management of older people in need for complex medical care (28). In clinical practice, assessment and management of frail patients is in the hands of geriatricians. Nowadays, the concept of frailty has a strong focus on physical domains and interventions are designed to build individual capacity to allow patients to return to their homes. Geriatric medicine has developed a strong expertise in this field and there is robust evidence for the sustainable effects of clinical intervention in frail older patients (21). However, geriatric competence is often not included in clinical decision-making by other medical professions in hospitals (horizontal integration). Hospital medicine in many EU countries, despite ageing societies being the main end-users of hospital care in nearly all specialties, is still disease centred and specialists are used to "work in silos" (29-31) between medical specialties but also between other professions involved into acute hospital care. The need to strengthen the links between geriatricians and other expertise inside and outside the clinical setting is very important. Despite the fact that many specialties have learnt that functionality, such as grip strength or gait speed, are valid prognostic markers for medical interventions in older patients (32), this has not led to more Inter-professional Collaborative Practice (ICP), but rather the use of screenings which are easy to perform for quick decision making in daily clinical practice. Using functionality to describe frailty is often seen as a static concept by many clinicians rather than a dynamic process with an option for intervention. Sometimes assessing functionality becomes a basis to exclude older people from intensive care or other highly specialized medical treatment as it is seen by some medical specialties and also care providers. This view is causing inequity in accessing to health care for older people and has been addressed also by other partnerships and platforms within the European Union (27). Moreover, the public health approach to frailty has to take into consideration factors that are often neglected by the clinical approach, especially social and economic factors independently related to individual negative outcomes like death, hospitalization rate and institutionalization rate (33). Still, many older citizens are admitted to hospital due to decreasing functional capacity and presenting with complaints due to geriatric syndromes. In a world of disease-centred medical care, the management of syndromes, which are caused by a variety of underlying mechanisms, asks for person-centred diagnostic processes also including nursing, social and environmental factors that allow health promotion approaches that are implemented also outside of the hospital settings. Frailty is not necessarily associated with multimorbidity and the evaluation of the concept of frailty in clinical practice needs special skills to align multimorbidity and functionality together with psychosocial

and environmental factors within the clinical concept of frailty.

Despite a huge amount of evidence on impact of early detection and management of frailty in clinical practice, there is nearly no link to translate this knowledge into public health interventions. Major causes for these "silos" are the lack of integration of processes of care, not including different professions and communities in the management of frailty in the different settings of care and cure. Nesting screening programs in primary care (either in GPs' offices or in community centres) will allow to track citizens through their journey of life, and will allow early detection of need of support of functional capacities as well as adaptation of environmental factors and health promotion strategies.

There are currently only few European countries going beyond primary care screening and making this information available across care settings. As stated in the current Health Program, this "integrated care" seeks to improve patient experience, outcomes of care and effectiveness of health systems (known as "triple aim") through linkage or coordination of services and providers along the continuum of care (34). Coordination of services for maintenance of functionality raises the demand of horizontal integration of medical, nursing, social and environmental factors. This "horizontal integration" will build the basis for sharing functional information across care settings, and will allow a comprehensive approach in the different contexts. Following citizens in a longitudinal way across care settings will then allow identifying dynamics in medical and functional needs at a very early stage of deterioration.

The currently low rate of screening programs across European member states leaves the countries - as well as the European Commission (EC) - with a poor understanding of clinical characteristics and functional capacities of European citizens. This hinders the development of a robust concept of frailty and functionality and its dynamics and may be seen as the major barrier for the development of broad, lifelong and integrated approaches for frailty management in public health in Europe.

Conclusion

Translating the concept of frailty in a shared arena between public health and clinical management - The EIPonAHA approach

More and more the concept of frailty is included in daily clinical management of patients to decide about care pathways and personalized care and cure developed around comprehensive geriatric assessment (14). However, integrated care translation of data is still lacking EU-wide. One option to translate data in an integrated care pathway is the indexing of frailty through the Frailty Index of accumulative deficits (35), the Frailty Phenotype (36), or the Frailty Trait Scale (37) in the context of the CGA. This approach has been proven effective for in and out of hospital management at individual level, to detect patients at risk (38), reducing mortality and hospital admissions (39, 40).

The use of the concepts of frailty based upon data from CGA facilitates integrated care, which has emerged as an effective way to improve outcomes for people living with chronic and complex physical and mental health conditions. The Joint Action Advantage, one of the largest spin-offs of the A3 action group of EIPonAHA, has recently presented a model of integrated care for prevention and management of frailty (2). In this person-centered model of care, a European wide group of stakeholders designed a structure for a comprehensive ecosystem to be involved into integrated care and cure for older citizens. Actions with evidence for prevention and management of frailty are as follows: Exercise (physical activity), appropriate

food intake, management of polypharmacy, stimulation of cognitive functioning, social engagement and proactive immunization (24).

A special focus of this concept includes building age-friendly environments, avoiding inequity to access social and health care, as well as coordination of well-informed and trained human resources. Figure 1 summarizes such a concept, that has been developed as a result of the collaborative work described. Integration of functionality in a lifelong approach from community to hospital has been fostered by stakeholders of the A3 action group of EIPonAHA over the past 8 years.

Figure 2 illustrates the comprehensive approach on how to bridge knowledge, skills and processes to promote active ageing in a lifelong approach, developed by the A3 action group of EIPonAHA. As it may be seen from the figure, public health planning can take advantage of the expertise gathered in the clinical work by implementing regular screenings followed by targeted preventive actions in a lifelong approach.

The way forward of the international groups was based upon building evidence around organizational models of integrated care, change management in health and social care systems including risk stratification (as mentioned) and effective care models, health workforce development, patient empowerment and communication. There is a widespread recognition of the added value of using digital tools as part of service transformation in support of health and care integration; and of empowering citizens to self-manage and to live more independently.

There is strong consensus in the group that integration and transformation of services requires technical, service and business innovation to be managed together to secure adoption and scaling. Redesigning systems is a highly complex process which requires collaboration between citizens, carers, professionals, decision-makers, funders and technology providers, supported by innovation methodologies, change in management approaches and strong local leadership committed to transformational change. A3 Action group members enjoy the advantage of strong links in the reference sites of EIPonAHA (41). This connection made it possible to test and implement

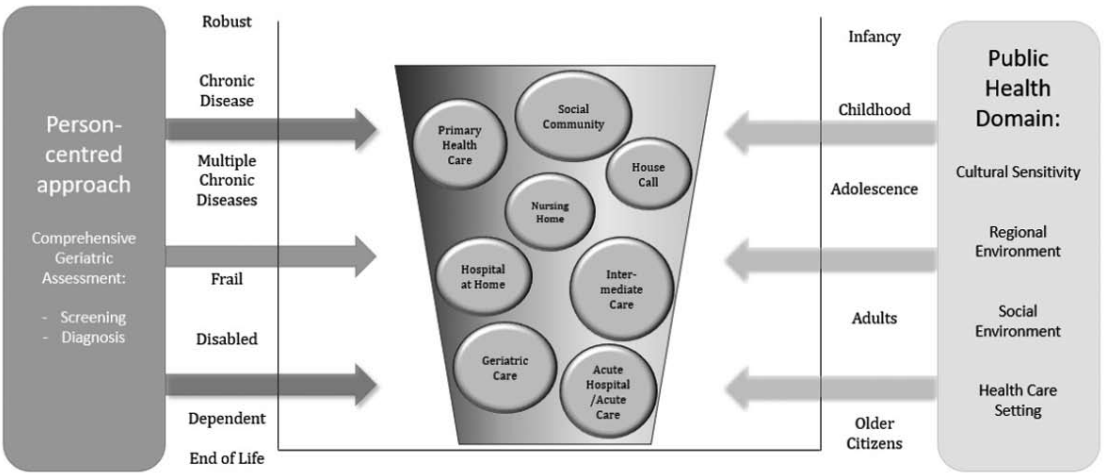

Figure 2 - Bridging two concepts of frailty management by the A3 action group of the EIPonAHA

new Information and Communication Technology (ICT) solutions for the purpose outlined before in this paper. Shared learning helped in building sustainable, digitally integrated health models and in better understanding the needs of older citizens and care providers (42). The work of the A3 group built evidence around the concept that transformation can be facilitated through effective knowledge transfer, e.g. methodologies, good practices, toolkits, etc, which can be accessed and shared via formal and informal networks, repositories and living labs, etc. (43).

Not many regions and organizations have implemented integrated care initiatives that invest in capacity and capability building of health and care professionals, along with citizen engagement. This gap is now more addressed during an EU funded project (44), a joint effort of A3 action partners with the intention to strengthen exchange of good practice models for workforce development, aiming to finally engage and empower patients and citizens. The potentially dwindling workforce and the changing nature of healthcare work are evolving and the skills of the current workforce are not well matched to future needs (43, 45). In this context the perception of frailty and intrinsic capacity by physicians, nurses and social workers needs to be more emphasized in future studies. The A3 action group, together with the Reference Site Collaborative Network (RSCN) of EIPonAHA, supports regions and organizations with the identification of their needs and the design of new roles for health and social care practitioners with associated competence in development planning and in scaling up capacity and capability building programs, strengthening the performance of staff and improving staff retention.

Engagement needs of older people with a focus on functionality rather than disease management as primary objective is considered as an overarching concept also embracing adherence, compliance, empowerment, health literacy, shared decision-making and activation. The challenge is to create a digitally enabled ecosystem approach to engaging and empowering patients and citizens supporting this integration. All actions outlined in this paper have been started and further developed under the joint partnership of the A3 action group between 2011 and 2019 in collaboration with the RSCN. The big challenge of translating the concept of functionality in a disease-centred world of care for older people has led to a new life-long concept of health promotion and prevention of age-related frailty and disease. Partnering with platforms like the steering group of EU member states on promotion and prevention, Euro-HealthNet, OECD and Digital Health Hubs will help to further implement and evaluate actions for bridging prevention and management of frailty between the two worlds of clinical and public healthcare across Europe. However, there are key questions and challenges to be solved: The Joint Action Advantage has suggested major points still to be translated into clinical practice; and the question on which screening instruments should be used to sensitively predict a clinical state of citizens is still to be answered by integrating functional data in a longitudinal manner in health records across European member states. Furthermore, training of staff working with ageing people across all sectors needs to be adapted. In this context the Joint Action Advantage has delivered a multi-professional capability framework (46), that needs to be implemented and evaluated in future studies.

Closing Remarks

The workshop interaction among the experts and stakeholders produced some take home messages which can be considered the key point to be addressed, in order to improve the integration of clinical activities with prevention by putting frailty at the centre of the integration process:

• Concepts of frailty and geriatric assessment are becoming more and more pivotal for daily clinical management and personalized care.

• Integrated care has emerged as a potentially effective way to improve outcomes for people living with chronic and complex physical and mental health conditions.

• An integrated person-centred model of care includes actions with evidence for prevention and management of frailty such as building age-friendly environments, physical activity, appropriate food intake, management of polypharmacy, stimulation of cognitive functioning, social engagement and proactive immunization.

• To secure adoption and scaling integration and transformation of services requires technical, service and business innovation to be managed together.

• Redesigning systems requires collaboration, supported by innovation methodologies, change management approaches and strong local leadership committed to transformational change.

• Preventing functional decline has led to a new life-long concept of health promotion and prevention of age-related frailty and disease

Challenges:

• strengthen the exchange of good practice models for workforce development

• create a digitally enabled ecosystem approach engaging and empowering patients and citizens.

• adopt training of staff working with ageing people across all sectors

Further issues:

• integrate functional data in a longitudinal manner in health records across European member states to measure the impact of frailty management and prevention at community level

List of Abbreviations

CGA: Comprehensive Geriatric Assessment
EC: European Commission
EIPonAHA: European Innovation Partnership on Active and Healthy Ageing
EU: European Union
GP: General Practitioner
ICP: Inter-professional Collaborative Practice
ICT: Information- and Communication Technology
MNA-sf: Mini Nutritional Assessment – short form
OECD: Organization for Economic Co-Operation and Development
RSCN: Reference Site Collaborative Network
SPPB: Short Performance Physical Battery
WHO: World Health Organization

Declarations

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Riassunto

Sanità pubblica e approccio clinico alla gestione proattiva della fragilità multidimensionale

Premessa. I cambiamenti demografici hanno costretto le comunità e gli individui a rimodellare concetti e approcci sull'invecchiamento e a cercare di sviluppare azioni volte a perseguire un invecchiamento attivo e in buona salute. In questo contesto, la Commissione europea ha avviato diverse interlocuzioni con enti pubblici e privati per sviluppare nuove soluzioni e risposte su questioni relative all'invecchiamento attivo. La "European Innovation Partnership on Active and Healthy Ageing"

(EIPonAHA), attraverso i gruppi di lavoro tematico e i reference sites si è impegnato in un'azione comune per facilitare l'invecchiamento attivo e in buona salute, contribuendo con elementi chiave a definire gli interventi, ampliare l'elenco delle migliori pratiche e valutare il loro impatto azioni allo scopo di promuovere l'innovazione in molte regioni d'Europa negli ultimi anni.

Metodi. Questo documento descrive l'azione intrapresa dal gruppo d'azione A3 nel partenariato europeo per l'innovazione sull'invecchiamento attivo e in salute. Questo documento offre una panoramica di come la partnership ha combinato la visione sulla fragilità proveniente dalla salute pubblica e dalla gestione clinica e come i partner del gruppo di azione A3 sono riusciti a superare le barriere tra questi due mondi.

Risultati. I partner all'interno dell'EIPonAHA hanno concettualizzato il declino funzionale e la fragilità facendo uso di modelli di buone pratiche sui programmi comunitari che funzionano bene all'interno di diverse regioni europee per affrontare la fragilità. Il Gruppo A3 di EIPonAHA ha lavorato a fianco di un processo di innovazione, rivolto a tutti i cittadini anziani con il chiaro obiettivo di coinvolgere le comunità nell'approccio preventivo.

Conclusioni. Sempre più il concetto di fragilità è incluso nella gestione clinica quotidiana dei pazienti. I bisogni di coinvolgimento delle persone anziane diventano un obiettivo primario, soprattutto se sono incentrati più sulla gestione funzionale. Inoltre, la formazione del personale che lavora con persone anziane in tutti i settori deve essere implementata e valutata in studi futuri.

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