

# More insight into influential factors on depression care strategies in nursing homes: Preliminary results of a meta-analysis

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## **Abstracts 45e Wintermeeting Belgische Vereniging voor Gerontologie en Geriatrie 2022**

**Auteurs:** Belgische Vereniging voor Gerontologie en Geriatrie

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## **Abstracts 45e Wintermeeting Belgian Society for Gerontology and Geriatrics 2022**

**Kernwoorden:** geriatrie, gerontologie

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### **MEDISCHE ABSTRACTS**

#### **Methods to elicit and evaluate the attainment of patient goals in medication optimization interventions for nursing home residents: a scoping review**

Amber Damiaens ([amber.damiaens@kuleuven.be](mailto:amber.damiaens@kuleuven.be)), Ann Van Hecke, Jan De Lepeleire, Veerle Foulon

*Purpose:* Research has shown that support is needed to elicit and evaluate patient goals. Currently, there is no overview available of methods that allow the elicitation and evaluation of patient goals, and the integration thereof in a medication optimization intervention for nursing home residents.

*Methods:* A scoping review was performed, guided by the methodological framework of Arksey and O'Malley. PubMed, Embase, CINAHL, and Web of Science were searched for relevant references. A two-stage selection process was performed: 1) screening of titles and abstracts, 2) screening of full texts. Selection of references and data extraction were performed by three independent reviewers, followed by team discussions to solve discrepancies. A qualitative approach was applied to synthesize the data.

*Results:* A total of 96 references was included in the review. Thirty-eight patient goal elicitation methods were identified. Five of these methods were specifically developed for NHRs. However, these did not contain a medication-related assessment. Twelve patient goal evaluation methods were identified, of which three were used in nursing home residents. One evaluation method was used to investigate patient goal attainment after a medication optimization intervention in older adults. Although this study did not include nursing home residents, the evaluation method has been successfully used in this population.

*Conclusions:* No comprehensive method was identified that allowed the elicitation and evaluation of patient goals and integration thereof in a medication optimization intervention for nursing home residents. Nevertheless, based on the identified elicitation and evaluation methods, a modular approach was proposed to facilitate this integration.

#### **COVID-19 May Increase the Risk of Herpes Zoster in Adults $\geq 50$ Years of Age**

Amit Bhavsar ([Jean-Michel.x.Heine@gsk.com](mailto:Jean-Michel.x.Heine@gsk.com)), Konstantina Chatzikonstantinidou, Germain Lonnet, Chengbin Wang, Raunak Parikh, Yves Brabant, Nathalie Servotte, Meng Shi, Robyn Widenmaier, Emmanuel Aris

*Introduction:* Several case reports have described shingles (herpes zoster; HZ) occurring shortly after COVID-19 diagnosis,

possibly due to SARS-CoV-2-induced T-cell immune dysfunction. However, these case reports could not determine whether patients with COVID-19 have a higher risk of developing HZ. We therefore assessed this in a retrospective cohort study.

*Methods:* We compared the HZ incidence in individuals  $\geq 50$  years old with a COVID-19 diagnosis (as well as in those hospitalized with COVID-19) versus those without COVID-19. We used data from the US Truven MarketScan Commercial Claims and Encounters and Medicare Supplemental databases (3/2020-2/2021) and Optum Clinformatics Data Mart database (3-12/2020). Individuals with COVID-19 were exact-matched 1:4 to individuals without COVID-19 by age, sex, HZ risk factors and healthcare cost. Relative risks (RRs) were estimated by Poisson regression.

*Results:* 394,677 individuals with COVID-19 were matched to 1,577,346 individuals without COVID-19. Baseline characteristics and length of follow-up were similar in both cohorts. The observed HZ incidence per 1,000 person-years was 8.16 (95% confidence interval [CI]: 7.63-8.72) in the COVID-19 and 6.81 (6.57-7.05) in the non-COVID-19 cohort; the RR estimate was 1.15 (95% CI: 1.07-1.24;  $p=0.0003$ ). The HZ risk was numerically higher until 183 days after COVID-19 diagnosis. The RR of HZ in individuals hospitalized with COVID-19 versus those without COVID-19 was 1.21 (1.03-1.41;  $p=0.02$ ).

*Conclusions:* This study showed that individuals  $\geq 50$  years old with COVID-19 had a 15% higher risk of HZ than those without COVID-19, highlighting the importance of maintaining adult immunization against non-COVID-19 diseases during the pandemic.

*Funding:* GlaxoSmithKline Biologicals SA.

### **Medicatiezicht en medicatie counselling door de ziekenhuisapotheker in het geriatrisch dagziekenhuis**

Andreas Capiou ( [Andreas.Capiou@UGent.be](mailto:Andreas.Capiou@UGent.be)), Marthe Tanghe, Anja Velghe, Nele Van Den Noortgate, Mirko Petrovic, Annemie Somers

*Doel:* Evaluatie van de klinisch farmaceutische activiteiten in het geriatrisch dagziekenhuis (GDZ) van het UZ Gent.

*Methodologie:* Er werd zowel een retrospectief (juli – februari 2021) als een prospectief (maart – mei 2021) onderzoek uitgevoerd. Het aantal en type geneesmiddelen, geneesmiddel-gerelateerde problemen (GGP's) en apotheekadviezen werd in kaart gebracht, zowel tijdens de retrospectieve en prospectieve periode. Medicatie counselling bij ontslag werd prospectief uitgevoerd a.d.h.v. de BVGG-richtlijn. Via een telefonisch follow-up gesprek (na 1 week) werd de ervaring en de patiënttevredenheid geëvalueerd.

*Resultaten:* Er werden in het retrospectief en prospectief onderzoek respectievelijk 48 en 35 patiënten geïnccludeerd. Deze patiënten namen gemiddeld  $10,2 \pm 5,4$  en  $9,7 \pm 5,8$  geneesmiddelen. Het mediaan aantal apotheekadviezen bedroeg 2 per patiënt, voor beide periodes. Een geneesmiddel zonder indicatie (33,3%; 25,4%) en een onaangepaste dosis (24,0%; 23,7%) waren de meest voorkomende potentiële GGP's en een geneesmiddel stoppen (39,6%; 30,5%) en een dosiswijziging (20,8%; 35,6%) waren de meest geformuleerde adviezen. Meer dan 75% van de adviezen werd geaccepteerd door de geriatr en iets meer dan de helft werd onmiddellijk geïmplementeerd in het medicatieschema van de patiënt. Ongeveer 40% van de opgenomen patiënten tijdens de observatieperiode werd gecounseld. De twee voornaamste redenen van exclusie waren een verblijf in een woonzorgcentrum en het klaarleggen en toedienen van medicatie door thuisverpleegkundigen. Patiënten rapporteerden hoge tevredenheid en ervoeren geen problemen met hun medicatie 1 week na opname in het GDZ.

*Conclusie:* Patiënten in het GDZ blijken een hoog aantal geneesmiddelen te gebruiken. Medicatiezicht en counselling door de apotheker vormen een meerwaarde bij het identificeren en vermijden van GGP's en patiënten bleken hierover tevreden.

### **The prevalence of potentially inappropriate prescribing and its association with demographic and clinical variables in older adults**

Cheima Amrouch ([cheima.amrouch@ugent.be](mailto:cheima.amrouch@ugent.be)), Mirko Petrovic, Delphine De Smedt, Amaia Calderón-Larrañaga, Davide L. Vetrano

*Goal:* Cardiometabolic diseases are a leading cause of death. Potentially inappropriate prescribing (PIP) is associated with serious adverse events. The aim of this population-based study is to assess the quality of prescribing and to analyze the association with demographic and clinical variables in the older community-dwelling Swedish population.

*Methods:* To assess the quality of prescribing we applied the Screening Tool of Older Persons Prescriptions/Screening Tool to Alert doctors to Right Treatment (STOPP/START) version2 on the Swedish National Study on Aging and Care in Kungsholmen dataset. Persons younger than 65 years were excluded. The Chi-squared test was used to investigate the association between STOPP/START and older adults ( $\geq 78$  years), gender, multimorbidity ( $\geq 2$  diseases), polypharmacy ( $\geq 5$  drugs) and (atrial fibrillation) (AF), heart failure (HF) and diabetes mellitus (DM).

*Results:* The study population ( $n=2337$ ) has a mean age of 79.32 years ( $\pm 9.26$ SD) with 30.5% of the sample being male and 69.5% of the sample being female. The median drug intake is 4[1-23], the median number of diseases is 4[0-16]. STOPP and START occur in respectively 37.8% ( $n=883$ ) and 31.3% ( $n=731$ ) of persons. PIP is present in 54.6% ( $n=1277$ ) of persons. Older age, multimorbidity, polypharmacy, AF and HF are significantly ( $p<0.001$ ) associated with STOPP and START. DM is significantly associated with START ( $p<0.001$ ). Gender is significantly associated with STOPP ( $p<0.001$ ) and women have a higher risk than men.

*Conclusion:* Older age, multimorbidity, polypharmacy, AF, HF and to a lesser extent DM and gender seem to be associated with PIP. In-depth analysis will be performed to further explore these associations.

### **Association between atrial fibrillation, frailty, and geriatric syndromes in the late elderly in a South Belgian outpatient and inpatient setting**

Christophe de Terwangne ([christophe\\_terwangne@hotmail.com](mailto:christophe_terwangne@hotmail.com)), Thibault Preumont, Smaranda Macovei, Antoine de Meester, Antonio Sorgente, Pierre Hanotier

*Introduction:* Atrial fibrillation (AF) is the most common cardiac arrhythmia encountered in the geriatric population and is associated with significant morbidity and mortality. Medical and interventional therapeutic options are limited in the elderly while AF undeniably affect quality of life which seems to be inversely correlated to frailty and functional decline.

*Aim:* This study aims to analyze the relationship between AF, frailty, and geriatric syndromes in elderly patients in an outpatient and inpatient setting in a South Belgian hospital.

*Methods:* This is a monocentric case-control retrospective analysis. 207 patients were enrolled from the Geriatric ward or from the outpatient clinic, Hopital Jolimont, La Louvière, from May 1st 2021 and July 31st 2021. Frailty was assessed using a complete geriatric assessment and Rockwoods Clinical Frailty Scale.

*Results:* AF was highly associated to age, cardiovascular history, congestive heart failure, as well as multiple geriatric syndromes such as vascular dementia, malnutrition, functional decline in Activities of Daily Living, mobility impairment and chronic ulcerous disease. Moreover, this study highlights a tight relationship between AF and Rockwoods' frailty phenotypes. This association is maintained throughout multivariate modelling including age (OR 1.06, IC 1.03-1.14,  $p=0.042$ ), sex (OR 2.30, IC 1.11-4.84,  $p=0.026$ ), congestive heart failure (OR 3.70, IC 1.77-7.91,  $p<0.001$ ) and a CFS more than 4 (OR 2.68, IC 1.18-6.43,  $p=0.021$ ) each showing to be independently related to AF.

A deeper understanding of associations between atrial fibrillation and geriatric syndromes and frailty could give new patient management perspectives beyond pharmaceutical or interventional treatment.

### **Treating diabetic peripheral neuropathy with traditional Chinese and classic Western medicine with or without acupuncture: a collaborative comparative**

Lynn Wei ([neoacupuncturebelgium@gmail.com](mailto:neoacupuncturebelgium@gmail.com)), Lisbeth Deneff, Olivia Lechien, Yu Jun

Diabetic peripheral neuropathy (DPN) is a significant source of disability and medical cost. The aim of this study was to assess the effectiveness of adding acupuncture to the traditional Chinese medical footbath Lavipeditum in improving blood perfusion, balancing sympathetic and parasympathetic elements of the autonomic nervous system (Yin-Yang energy), to eventually reduce the pain of DPN.

*Aims and objectives:* the effects of using a traditional footbath used in Chinese medicine with or without acupuncture to treat diabetic patients suffering from DPN were studied over 20 consecutive weeks from early July to early December 2019 using Infrared Thermography along the traditional Chinese Clinical Symptom Score (CSS) and Neuropathy Syndrome Score (NSS), with the aim to introduce, adapt and redirect acupuncture therapy in Belgium.

*Methods:* 60 diabetic patients, aged 55-84, with reported symptoms of diabetic neuropathy in the lower extremities, were examined both at OVIVE Centre de Médecine Intégrative, Center Medical MALOU Belgium and remotely by Dr Yu in Shanghai, according to the following protocol: Belgian physicians ensured classic Western treatment with strict diabetes education, diet control, exercise and Metformine (500 mg twice daily) whilst Dr Yu ensured Traditional Chinese Medicine (TCM) treatment and follow-up by examining the tongue of each participant using Skype diagnosis of Traditional Medicine Patterns, liaising with Dr WEI, who examined both the tongue and pulse of each participant at each consultation. Patients were randomly divided into 2 groups, Group A (n=30, 15 women, 15 men, aged 54-67, average 60 years old) and group B (n=30, 15 women, 15 men, aged 54-84, average 69 years old). All participants were given daily LYRICA® (pregabalin, 2x75mg) along with a TCM footbath Lavipeditum (Dr Yu formula, Shanghai). Only Group B participants were given added acupuncture therapy once a week, using infrared thermographic imaging before and after each treatment.

*Results:* All the participants completed the study. They reported a significant reduction in the following DPN symptoms: pain (A: 26/30, 13 women, 13 men; B: 22/30, 11 women, 11 men), prickling sensation (A: 3/30, 3 women, 0 men; B: 11/30, 10 women, 1 men), coldness (A: 11/30, 7 women, 4 men; B: 17/30, 10 women, 7 men), numbness (A: 11/30, 7 women, 4 men; B: 17/30, 10 women, 7 men), and/or flaccidity (A: 11/30, 7 women, 4 men; B: 17/30, 10 women, 7 men). After treatment, the mean values for CSS and NSS were all significantly decreased (overall Student's t-test: A  $p < 0.05$ , B  $p < 0.01$ ). Traditional Medicine Patterns were statistically significantly improved following added acupuncture treatment in Group B compared to Group A (B: 27/33, 81.81% vs. A: 21/32, 65.62%:  $p < 0.05$ ). Infrared camera imaging objectively demonstrates the positive effects of the acupuncture therapy on DPN.

*Conclusion:* Chinese medicine Lavipeditum and acupuncture used with Western medicines is safe and effective in treating DPN.

Key words: Diabetic Peripheral Neuropathy; Clinical Symptom Score; Neuropathy Syndrome Score; Traditional Chinese Medicine Patterns; Acupuncture; Chinese medicine; footbath Lavipeditum; Metformin; pregabalin; thermography.

### **Pitfalls and challenges of the use of the Geriatric Nutritional Risk Index as a screening tool in older inpatients with COVID-19 in the AgeBru cohort**

Dorien De Meester ([demeesterdorien@gmail.com](mailto:demeesterdorien@gmail.com)), Dolores Sanchez-Rodriguez, Marie Claessens, Mathijs Goossens, Siddhartha Lieten, Florence Benoit, Murielle Surquin

*Objective:* To determine whether the Geriatric Nutritional Risk Index (GNRI) on admission was associated to an increased 14-day, 6-, and 12-month mortality-risk in older inpatients with COVID-19.

*Methods:* Cohort study of consecutive inpatients aged  $\geq 65$  and older admitted due to COVID-19 in a university hospital in Belgium. Inclusion criteria: Age  $\geq 65$ -year-old and positive PCR-RT. Exclusion criteria: Patients with missing data for weight, length, and/or albumin, hospital-acquired COVID-19, or transferred to another institution. The GNRI  $([1.489 \times \text{albumin}(\text{g/L})] + [41.7(\text{weight}/\text{ideal weight according Lorentz formula})])$  was assessed at admission. Two groups were defined: Patients at high (GNRI  $\leq 98$ ) and low risk (GNRI  $> 98$ ). Cox-proportional hazards models were used to assess the association between the GNRI

and the 14-day, 6-, and 12-month all-cause mortality-risk while adjusting for potential confounders.

*Results:* Of the 570 eligible patients, 224 (78.3±9.4-year-old; 52.2% women) met inclusion criteria and 151 (67.4%) were at high risk. Sixty-five (29.2%) patients died during the 14-day follow-up. The 14-day mortality HR of patients at high risk was 7.49 [CI95% 0.99-56.34; p=0.050], but the association disappeared after correction for inflammation HR=6.91 [CI95% 0.88-51.10; p=0.065]. No association at 6-month, HR=1.44 [CI95% 0.76-2.56; p=0.251] and 12-month HR=1.45 [CI95% 0.79-2.67; p=0.223] was found.

*Conclusions:* A GNRI at high risk at admission was associated with an 8-fold higher mortality in older inpatients with COVID-19 during 14-day follow-up, but this association was mediated by acute COVID-19-related inflammation and disappeared at 6- and 12-month follow-up. The GNRI was influenced by inflammation and provided misleading information as a malnutrition screening tool in older inpatients with COVID-19.

Key words: GNRI; COVID-19; inflammation; mortality; cohort; AgeBru.

### **Correlatie tussen bio-elektrische impedantie-analyse en spierechografie van de biceps brachii bij gezonde personen**

Elisa Cassiers ([elisa.cassiers@uza.be](mailto:elisa.cassiers@uza.be)), Anne-Marie De Cock, Maurits Vandewoude, Stany Perkisas

*Doel:* Spierechografie is een techniek om spiermassa (MM) en -kwaliteit in kaart te brengen, maar referentiewaarden ontbreken. Het doel van deze studie was om referentiewaarden te bekomen voor de biceps brachii (BB) bij gezonde personen, en deze te vergelijken met bio-elektrische impedantie-analyse (BIA), een gevalideerd instrument voor spiermassameting.

*Methodologie:* Bij gezonde proefpersonen werd een spierechografie verricht op 2 locaties van de dominante BB (op 50% en 75% van de afstand tussen acromion en elleboogploo). Hierbij werden dwarsdoorsnede (CSA) en spierdikte (MT) bepaald. Hierna werden MM en de fasehoek (PHA) van de dominante arm gemeten via BIA, en werden deze resultaten gecorrigeerd aan de spierechografische parameters.

*Resultaten:* Honderddrieëntwintig gezonde personen (51 mannen, 72 vrouwen), leeftijd 18-69 jaar, werden geïncludeerd. MM gemeten door BIA vertoonde een sterk positieve correlatie met CSA gemeten door echografie op 50% (p<0.001, PCC=0.857) en 75% (p<0.001, PCC=0.841), en met MT op 50% (p<0.001, PCC=0.822) en 75% (p<0.001, PCC=0.787). Hiernaast bleek ook een sterk positieve correlatie tussen PHA gemeten door BIA en CSA op 50% (p<0.001, PCC=0.796) en 75% (p<0.001, PCC=0.736), en met MT op 50% (p<0.001, PCC=0.722) en 75% (p<0.001, PCC=0.684). Ook wanneer de 2 geslachten apart werden geanalyseerd, vond men positieve correlaties tussen MM, PHA, CSA en MT (50% en 75%).

*Conclusie:* CSA en MT van de BB gemeten via echografie op 2 verschillende locaties vertonen een positieve correlatie met MM en PHA gemeten via BIA. Dit brengt ons een stap dichterbij het implementeren van spierechografie als een goedkoop en niet-invasief meetinstrument voor sarcopenie.

### **Correlatie tussen handknijpkracht en spierechografie van de biceps brachii bij gezonde personen**

Elisa Cassiers ([elisa.cassiers@uza.be](mailto:elisa.cassiers@uza.be)), Anne-Marie De Cock, Stany Perkisas

*Doel:* Binnen de diagnostiek van sarcopenie wint spierechografie meer en meer aan belang. Het is reeds geweten dat handknijpkracht (HKK), wat kan gebruikt worden als schatting van de totale spierkracht, afneemt bij stijgende leeftijd. In dit onderzoek wilden we onderzoeken of HKK een correlatie vertoont met echografische parameters van spiermassa (MM) en -kwaliteit.

*Methodologie:* Bij gezonde proefpersonen werd rechtopstaand met de dominante arm in een rechte hoek de HKK bepaald met een dynamometer. In ruglig werden dwarsdoorsnede (CSA), spierdikte (MT), pennatiehoek (PA) en elastische eigenschappen (EG) echografisch bepaald op 2 locaties van de dominante biceps brachii (op 50% en 75% van de afstand

tussen acromion en elleboogplooij). Vervolgens werd regressieanalyse toegepast op alle parameters, en werden de correlaties onderzocht.

*Resultaten:* Honderddrieëntwintig gezonde individuen (51 mannen, 72 vrouwen), leeftijd 18-69 jaar, werden geïncludeerd. HKK daalde met stijgende leeftijd. HKK vertoonde een sterke positieve correlatie met CSA op 50% ( $p < 0.001$ ,  $PCC = 0.817$ ) en 75% ( $p < 0.001$ ,  $PCC = 0.808$ ), en met MT op 50% ( $p < 0.001$ ,  $PCC = 0.703$ ) en 75% ( $p < 0.001$ ,  $PCC = 0.709$ ). Ook wanneer de 2 geslachten apart werden geanalyseerd, vond men positieve correlaties tussen HKK en CSA, en HKK en MT.

*Conclusie:* Spierechografie wint aan belang als meettechniek voor spierkwaliteit en -kwantiteit. De correlatie tussen HKK en de spierechografische parameters CSA en MT helpt de positie van echografie als diagnostisch instrument voor spieraandoeningen, zoals sarcopenie, te versterken.

### **The effect of strength training on muscle-specific vascularization in healthy older persons : a systematic review**

Emelyn Mathot ([emelyn.mathot@vub.be](mailto:emelyn.mathot@vub.be)), Niels Cornand, Andreas Delaere, Lene Salimans, Ivan Bautmans

*Purpose:* Aging is associated with reduced cardiorespiratory fitness, as well as impaired responsiveness of skeletal muscle tissue to anabolic stimuli. Both are affected by skeletal muscle capillarization. Exercise can improve vascular function and increase blood flow capacity. However, evidence for the role of muscle vascularization in older adults is sparse.

The aim of this systematic literature search was to collect and appraise available data regarding the effect of strength training on muscle-specific vascularization in healthy older persons.

*Methods:* Literature databases Pubmed and Web of science were systematically screened for relevant articles. 25 articles were included.

*Results:* The results of this review show that a significant effect of resistance exercise on the capillary density and capillary-to-fiber ratio could be observed in animals. In human trials, a significant increase of the capillary density and capillary-to-fiber ratio after resistance training could also be observed. Moreover, in humans, 4 articles also showed an effect of exercise on the number of capillary contacts, the number of capillaries in contact with an individual fiber.

*Conclusions:* This review shows that resistance exercise can positively affect the muscle-specific capillarity in animals and older adults. Increases in capillarization could not only influence the blood-tissue exchange and therefore also the metabolism in skeletal muscle in elderly, but also impact the blood flow and muscle protein response as well as support muscle hypertrophy after exercise.

### **Prognostic accuracy of the Seattle Heart Failure Model for one-year mortality in hospitalized older persons**

Eva Duyver ([eva.duyver@uzgent.be](mailto:eva.duyver@uzgent.be)), Lineke Hens, Hilde Baeyens, Anja Velghe, Nele Van Den Noortgate, Ruth Piers

*Introduction:* Older people living with frailty and/or heart failure are at risk for decreasing quality of life and early death. We aimed to study if the Seattle Heart Failure Model (SHFM) can be used as a prognostic tool for one-year mortality in a general older population.

*Methods:* In this prospective study, we included patients aged 75 and older at the acute geriatric (AGU) and cardiology unit (CU) of two hospitals. Clinical, pharmacological, device and laboratory characteristics were assessed to calculate the mean 1-year survival score by SHFM. We performed ROC and COX-regression analyses.

*Results:* We collected data in 221 participants. Patients in AGU ( $n = 103$ ) were older, more female, more ADL-dependent and screened more positive on ISAR compared to CU ( $n = 118$ ). Neither Charlson comorbidity score nor SHFM score differed between the units (mean SHFM 88.5 on AGU versus 88.7 on CU,  $p = 0.702$ ). Mean left ventricle ejection fraction was 52.6 on

AGU versus 55.3 on CU ( $p=0.012$ ).

The ROC curve showed an AUC of 0.751 ( $p<0,001$ ). The optimal cut-off was a SHFM of 91.6 with sensitivity 77.1% and specificity 56.6%. The proposed cut-off was associated with positive predictive value 31.6% and negative predictive value 89.7%.

A Cox regression showed a significant association between survival time and type of unit (HR 2.72, AGU versus CU,  $p=0.004$ ) and survival time and SHFM (HR 0.75 for every increase of 5 on SHFM).

*Conclusion:* The SHFM score has good prognostic accuracy for one-year mortality in older persons hospitalized on acute geriatric and cardiology units.

### **Has COVID-19 changed the way out-of-hours telephone triage services are used by older adults?**

Farah Islam ([farah.islam@kuleuven.be](mailto:farah.islam@kuleuven.be)), Koen Milisen, Gellens Marc, Joël Enckels, Ewa Koco, Christoph Sowada, Marc Sabbe

*Purpose:* As part of the TRANS-SENIOR international training and research network, we aimed to describe changes in the use and uptake of a national out-of-hours telephone triage service by older adults (aged 65 and over) before and during the COVID-19 pandemic.

*Methods:* A retrospective descriptive study was conducted using registry data obtained from the 1733 service in the Flemish region of Belgium (more info: <http://www.1733.be>). All calls received between January 1, 2019 and December 31, 2019 (before COVID-19 period) and January 1, 2020 and December 31, 2020 (during COVID-19 period) were analyzed.

*Results:* N=56,766 calls received by the 1733 service were included for analysis. Of the total calls, n=10,890 (19.2%) involved cases related to older adults. Calls concerning older adults were distributed as n=5,617 (22.2%) and n=5,273 (16.7%) before- and during the COVID-19 period respectively ( $p<.001$ ). From a total of n=4,763/56,766 (8.4%) of all incoming calls that were classified as a higher urgency by operators (versus classified as lower urgency), the majority involved older adults over the age of 65. Specifically, n=2,159 (82.7%) of all high urgency calls dispatched before- and n=1,658 (76.9%) of all high urgency calls dispatched during the COVID-19 pandemic involved cases concerned older adults ( $p<.001$ ). Finally, n=714 (6.7%) of all incoming COVID-19 related calls (n=10,606) concerned older adults aged 65 and over.

*Conclusions:* The findings of this study suggest evidence for change in the frequency and urgency of calls made to the 1733 out-of-hours telephone triage service concerning older adults surrounding the COVID-19 pandemic.

### **In-hospital end-of-life care in the old: a retrospective study of ICU use and DNR forms in patients deceased in a Belgian tertiary hospital**

Felicia Bentin ([felicia.bentin@ugent.be](mailto:felicia.bentin@ugent.be)), Nele Van Den Noortgate, Ruth Piers

*Purpose:* To explore the quality of in-hospital end-of-life care in adult patients with special attention to those 75 years and older and to make a comparison with the situation 10 years ago.

*Methods:* Data were retrospectively collected in adult patients who deceased at the Ghent University Hospital between September 2018 and December 2019. Main outcome measures were 'dying in the ICU', 'ICU stay' and 'frequency of DNR forms'. In order to identify possible risk factors for ICU stay logistic regression was performed.

*Results:* In total, 762 people died of whom 35% were 75 or older. One third (31%) died in the ICU, compared to 49% of patients <75 years ( $p<0.001$ ), which is comparable to 10 years ago (respectively 31% and 46%). Of people  $\geq 75$  years, 38% had an ICU stay during their last hospitalization, compared to 42% 10 years ago. The median length of ICU stay was 5 versus 3 days 10 years ago. After adjusting for gender, comorbidities and Charlson comorbidity score, factors associated with less ICU stay were higher age, active malignancy and dementia (OR 0.829, 0.140 and 0.094 respectively).



For older patients on non-ICU wards 2% (versus 13%, 10 years ago) died without DNR form.

*Conclusion:* Although there was an increase in the frequency of DNR forms at the moment of dying in non-ICU wards, no significant differences were seen in ICU use during patients final hospitalization compared to 10 years ago. Factors associated with less ICU use were higher age, active malignancy and dementia.

### **Safety and Immunogenicity of Recombinant Zoster Vaccine (RZV) administered with 13-Valent Pneumococcal Conjugate Vaccine (PCV13) in Adults $\geq$ 50 Years**

Ji-Young Min ([Jean-Michel.x.Heine@gsk.com](mailto:Jean-Michel.x.Heine@gsk.com)), Agnes Mwakingwe-Omari, Megan Riley, Lifeter Yenwo Molo, Jyoti Soni, Ginette Girard, Jasur Danier

*Background:* This phase 3b, open-label, multi-center study (NCT03439657, N=913) assessed the immune non-inferiority, the reactogenicity and safety of RZV when co-administered with PCV13 in adults aged  $\geq$ 50 years, compared to sequential administration.

*Methods:* Adults were randomized 1:1 to receive concomitantly RZV and PCV13 at Month (M) 0 and a second dose of RZV at M2 (Co-Ad group); or a sequential administration of PCV13 at M0 and RZV at M2 and M4 (Control group).

Primary objectives evaluated the vaccine response rate (VRR) to RZV at 1M post-dose 2 and the non-inferiority of the humoral response to RZV and PCV13 after concomitant versus sequential administration, measured at 1M after RZV dose 2 and PCV13. Solicited and unsolicited adverse events (AEs), serious AEs (SAEs), potential immune-mediated diseases (pIMDs) were also recorded.

*Results:* In the Co-Ad group (n=427), the VRR to RZV was 99.1% and the humoral responses to RZV and PCV13 were non-inferior to those in the control group (n=436). Pain and myalgia were the most frequent solicited local and general AEs, respectively. The frequency of solicited local and unsolicited AEs were similar between groups, and the frequency of solicited general AEs after co-administration was similar to the administration of RZV alone. None of the reported SAEs or pIMDs were vaccine-related.

*Conclusion:* Co-administration of RZV with PCV13 was non-inferior to sequential administration in terms of humoral immune responses, showed a clinically acceptable safety profile, and may improve vaccination rates in the 50+ adult population.

*Funding:* GlaxoSmithKline Biologicals SA

### **Associations between dietary polyunsaturated fatty acids (PUFAs) intake and sarcopenia outcomes**

Jolan Dupont ([jolan.dupont@uzleuven.be](mailto:jolan.dupont@uzleuven.be)), Eva Wauters, Lenore Dedeyne, Nadja Amini, Laurence Lapauw, Katrien Koppo, Evelien Gielen

*Purpose:* To assess in sarcopenic older adults of the Exercise and Nutrition for Healthy AgeiNg (ENHANce) study the association between PUFAs' dietary intake and sarcopenia outcomes.

*Methods:* ENHANce is an ongoing 5-armed triple blinded randomized controlled trial (NCT03649698), in sarcopenic older adults (>65y) aiming to assess the effect of combined anabolic interventions (protein, omega-3 supplement and exercise) on physical performance in these adults, compared to single/placebo interventions. Baseline data were used for a secondary exploratory cross-sectional analysis. Dietary PUFAs intake was assessed both subjectively (four-day food diaries) and objectively (RBC membrane fatty acids profiles). Spearman's rho( $\rho$ ) correlation coefficients were calculated to explore associations between dietary PUFAs intake and sarcopenia-defining parameters (handgrip strength, chair stand test, appendicular lean mass(aLM), gait speed, Short Physical Performance Battery), as well as physical activity and quality of life (SF-36, SarQoL).

*Results:* In total, 29 subjects (9/20, mean age 76.3  $\pm$ 5.4 y) were included. Total omega-3 intake of participants (1.99  $\pm$ 0.99g/d)

was below the recommended intake ( :2.8-5.6g/d; :2.2-4.4g/d). Contrary to what was expected, RBC %ALA ( $\alpha$ -linolenic acid) was inversely associated with aLM ( $p$ :-0.439; $p$ =0.017), whereas RBC %DHA (docosahexaenoic acid) and the RBC Omega-3 Index were positively associated with aLM ( $p$ :0.388; $p$ =0.038 and  $p$ :0.368; $p$ =0.049, respectively). Additionally, omega-3 PUFAs intake was positively associated with step count, SF-36 and SarQoL scores, whereas RBC %GLA (gamma-linolenic acid) was inversely associated with SF-36 physical component summary score ( $\rho$ =-0.426;  $p$ =0.024)

*Conclusions:* Some interesting associations between PUFAs intake and sarcopenia outcomes were found. Unravelling the complex balance between beneficial and detrimental PUFAs is, however, challenging and requires further research.

### **Geriatric care for surgical patients in Belgian hospitals: a cross sectional survey**

Katleen Fagard (katleen.fagard@uzleuven.be)

*Objective:* To examine geriatric services for surgical patients in Belgium and geriatricians' reflections on current practice.

*Method:* Electronic questionnaire to heads of geriatric departments.

*Results:* Fifty-four recipients (59%) completed the survey. Preoperative geriatric risk screening is performed in 25/54 hospitals and systematically followed by geriatric assessment (GA) in 17 hospitals. Preoperative GA in a standard programme is performed for outpatients, emergency departments, and during hospitalisation in 5, 6, and 4 hospitals, respectively. In 26 hospitals geriatric teams attend multidisciplinary team meetings for older surgical patients, either preoperatively ( $n$ =19) or postoperatively ( $n$ =17). Sixteen geriatric teams provide training programmes for surgical teams. Thirty-one hospitals provide geriatric reference nurses on surgical wards. Medical advice by geriatric teams in the perioperative period is provided in 44 hospitals and 49 hospitals provide paramedical advice, of which adherence is monitored in 33 and 38 hospitals, respectively. Forty-three hospitals provide reactive care on request of the surgical team, while 25 hospitals provide proactive care on one or more surgical wards. Thirty-six hospitals hospitalise surgical patients on the geriatric ward, predominantly in the following surgical disciplines trauma/orthopaedic, abdominal, and vascular surgery. Ninety-eight percent of respondents feel that more geriatric input for surgical patients is needed. Asking for barriers to further implement geriatric-surgical care, the most common 'strongly agree' answers were lack of geriatricians, funding and unadjusted 'Geriatric Care Programme'.

*Conclusions:* Geriatric services for surgical patients are evolving in Belgium but there are opportunities and challenges for improvement.

*Remark:* In case of additional responses, updated results will be presented.

### **The incidence of chemotherapy side effects in older patients with gastrointestinal cancer and the use of G8 and GARG score as predictive tools**

Lauren Vanderlinden ([lauren.vanderlinden@hotmail.com](mailto:lauren.vanderlinden@hotmail.com)), Marc De Man, Anja Velghe

*Purpose:* Risk of chemotherapy side effects in older patients is high. Geriatric assessment (GA) allows to detect geriatric problems, with possible impact on therapy, but is time consuming. Therefore screening is recommended to identify patients in need of GA. In addition, chemotherapy toxicity prediction tools have been developed. In this study, we describe incidence and nature of chemotherapy side effects in patients  $\geq 70$  years with digestive tumours, scheduled for chemotherapy, and evaluate G8 and Cancer and Ageing Research Group (CARG) score as predictive means.

*Methods:* CARG and G8 score were determined at start, side effects from start to first restaging

*Results:* 48 patients were included. Median age was 75 years. Although 85% of the participants in this study had ECOG-PS 0 or 1, 77% had a geriatric risk profile ( $G8 \leq 14$ ) and 96% had an intermediate or high CARG score. During one treatment cycle, 46% developed side effects, with unexpected hospitalization in 23% and treatment interruption in 19%. Incidence of severe side effects, hospitalizations and early discontinuation were similar for all risk groups, irrespective of CARG score. There was no difference in incidence of grade 3/5 side effects between those with or without ( $G8 > 14$ ) geriatric risk profile. However, in

the latter, fewer unexpected hospitalizations ( $p=0.04$ ) and definitive treatment discontinuation ( $p=0.07$ ) were observed. Since hospitalization is significantly associated with termination of therapy ( $p=0.001$ ), these findings can be considered equally clinically relevant.

*Conclusion:* In patients with digestive tumours, CARG score nor G8 score does predict risk of chemotherapy side effects and fail to select patients to whom treatment should be discouraged. G8 screening allows to define a relatively small group with low risk of clinically relevant surrogate side effects.

### **TEMPUS-FUGIT: protocol of a study to explore the gut-muscle axis in older adults with sarcopenia**

Laurence Lapauw ([laurence.lapauw@kuleuven.be](mailto:laurence.lapauw@kuleuven.be)), Jolan Dupont, Nadjia Amini, Jeroen Raes, Evelien Gielen

TEMPUS-FUGIT: protocol of a study to explore the gut-muscle axis in older adults with sarcopenia.

*Objectives:* The Trial in Elderly with Musculoskeletal Problems due to Underlying Sarcopenia: Faeces to Unravel the Gut and Inflammation Translationally (TEMPUS-FUGIT) aims to explore the gut-muscle axis, comparing gut microbiota (GM)-composition between sarcopenic and non-sarcopenic older adults and determining the associations between GM, intestinal or systemic inflammatory markers and sarcopenia-defining parameters (muscle mass, muscle strength, physical performance). Furthermore, the effect of anabolic interventions for sarcopenia on GM and intestinal inflammation will be explored.

*Methods:* First, in a cross-sectional case-control study, 100 community-dwellers (>65 years) without sarcopenia are recruited, matching (age, sex, BMI) 100 sarcopenic participants from ENHANce (NCT03649698). ENHANce is an ongoing study, determining the effects of single/combined interventions (exercise, protein, omega-3 supplementation) in persons with sarcopenia defined by the European Working Group on Sarcopenia in Older People 2 (EWGSOP2). GM-composition and intestinal inflammatory markers (calprotectin, lactoferrin, S100A12) are assessed in stool samples and differences will be compared between sarcopenic and non-sarcopenic persons. Systemic inflammatory markers (hs-CRP, IL-6, TNF- $\alpha$ , IL-10, IL-13, IL-1 $\beta$ ) are determined in fasted blood samples. Linear regression will be used to determine associations between gut, inflammatory and sarcopenia-defining parameters. Second, ENHANce-participants will deliver five stool samples to determine longitudinal changes in GM and intestinal inflammation during the 12-week intervention period. Linear mixed models will be used. Ethical approval was obtained (s65127) and trial was registered at ClinicalTrials.gov(NCT05008770).

*Results:* The protocol of this study is close to submission. Results are expected by 2024.

*Conclusion:* TEMPUS-FUGIT aims to clarify the interaction of gut-muscle in age-related sarcopenia, possibly opening future perspectives for novel sarcopenia treatment strategies targeting GM.

### **The effect of resistance exercise on the immune cell function in humans: a systematic review**

Lene Salimans ([lene.salimans@vub.be](mailto:lene.salimans@vub.be)), Keliame Liberman, Rose Njemini, Inge Kortekaas Krohn, Jan Gutermuth, Ivan Bautmans

*Purpose:* Aging is associated with immunosenescence and inflammaging, which contributes to increased susceptibility of older persons to morbidity and mortality. Resistance exercise has beneficial effects on the physical fitness and immunity of older adults. However, the underlying mechanisms are not yet understood and might involve changes in immune cell function. Our aim is to provide a systematic analysis of the literature regarding the impact of resistance exercise on immune cells in the blood circulation.

*Methods:* The protocol of this systematic review was registered at PROSPERO (ID: CRD42020157834). Exercise intervention studies, which investigated effects of resistance exercise on immune cell function in humans were included. An approximation of the effect sizes was calculated by Cohen's d. The Cochrane risk of bias tool (Rob-2 and ROBINS-I) was used to assess internal validity.

*Results:* The search stream of databases PubMed and Web-of-Science yielded respectively, 4311 and 3106 articles, of which

1303 were duplicates. Thirty-two articles are eligible for full-text analysis of which were 11 RCTs and 6 non-RCTs. Although only resistance exercise interventions were included, there was a high heterogeneity regarding specific exercise modalities. The most frequently studied outcome measures were the gene and protein expression levels in PBMCs.

*Conclusions:* To conclude, this systematic review demonstrate that resistance exercise has beneficial effects on several aspects of immune cell function both in young and older individuals. Acute changes in immune cell function occur already after a single bout of resistance exercise. Moreover, regular resistance training during several weeks seems necessary to obtain beneficial adaptations that can be related to better immunity and reduced inflammation.

### **Effect of a complex intervention for multidisciplinary medication review in nursing homes, with ICT-support for the evaluation of the appropriateness**

Maarten Wauters ([maarten.wauters@uantwerpen.be](mailto:maarten.wauters@uantwerpen.be)), Tinne Dilles, Robert Vander Stichele, Monique Elseviers, Thierry Christiaens

*Background:* Potentially inappropriate medication use at old age can lead to increased health care usage and costs. Multifaceted complex interventions involving all health care professionals in the medication management process may be more likely to improve geriatric pharmacotherapy.

*Aim(s):* To investigate the impact of the OptiMEDs intervention: a complex multifaceted intervention for holding a medication review using the OptiMEDs software in nursing home (NH) residents.

*Methods:* A pilot study was held in three NHs (2 intervention, 1 control). The OptiMEDs intervention aimed to hold a medication review (with input of nurses, pharmacists and general practitioners) supported by software for performing patient-specific side-effect monitoring and for recognizing potentially inappropriate medications (PIM). Eligible NH residents were at least 65 years, and were non-dementia or dementia patient. Residents with a limited life-expectancy were excluded. Medication related process factors were evaluated one month after the intervention, other follow-up data collection was suspended due to the COVID-19 pandemic.

*Results:* Participants (n=148) had a mean age of 87.2 (range 67-101) years, with 75.0% females and 49.3% non-dementia patients. The mean number of medications varied between nursing homes (range 5.6 – 7.6). At least one PIM was found in 84.7% of the population and 84.5% of residents in the intervention arm had symptoms (range 1-19) potentially related to medications.

After the multidisciplinary medication review, there was a decrease of at least one medication in 35.8% and at least one PIM in 25.9% in the intervention arm. The GP changed at least one prescription when the nurse observed more potential medication-related symptoms (53.8% in those with many observed symptoms versus 11.8% in those with no symptoms).

*Discussion:* The medication reviews supported by the OptiMEDs tool resulted in a decrease in total number of medications and number of PIMs.

### **Intention tremor as a rare presentation of metastatic papillary thyroid carcinoma: a case report**

Mick van de Wiel ([mickvandewiel@gmail.com](mailto:mickvandewiel@gmail.com)), Marleen Van Esbroeck, Catherine Van Dessel, Elke Roofthoofd

A 71-year-old female patient was admitted because of gait disturbances and change of character. The patient herself mentioned only that she had some memory difficulties, but no other complaints. She is known to have diabetes mellitus type 2. Clinically, we see an apathetic, confused lady for whom it is difficult to initiate a conversation. Neurologically an intention tremor on the left, a slightly ataxic gait is observed. CT brain shows a periventricular leukomalacia with secondary enlargement of the ventricular system. Pending the brain MRI, a subtle further deterioration of cognition and gait was noted. MRI of the brain finally showed a mass in the mid-brain at the level of the lamina quadrigemina, with secondary hydrocephalus. Primary cerebral malignancy was suspected. Further oncological work-up with CT thorax/abdomen finally showed bilateral lung lesions

suggestive of metastases and a heterogenous mass at the level of the thyroid. Fine needle aspiration cytology (FNAC) ultimately confirmed the diagnosis of a papillary thyroid carcinoma (PTC).

Neurological symptoms as a first presentation of a metastasised papillary thyroid carcinoma are very rare. PTC usually spreads to the regional lymph nodes with occasional distant metastasis to the lungs and bones (11% of cases). In this case, too, our initial thoughts were along these lines. In geriatrics, the 3-D's (dementia, delirium, depression) are often used to describe behavioural problems and confusion in the elderly. We want to emphasise that we should always remain open to other and rather rare causes of these problems in the elderly patient.

### **Sarcopenia and cognitive performance in a cohort of middle-aged and older European men: data from the European Male Ageing Study (EMAS)**

Nadjia Amini ([nadjia.amini@kuleuven.be](mailto:nadjia.amini@kuleuven.be)), Jolan Dupont, Laurence Lapauw, Leen Antonio, Dirk Vanderschueren, Jos Tournoy, Evelien Gielen

*Objective:* Previous research suggested that sarcopenia is associated with cognition. However, data in older adults with well-defined sarcopenia – according to the diagnostic criteria of the European Working Group on Sarcopenia in Older People 2 (EWGSOP2) – are scarce.

This study aims to investigate cross-sectional and longitudinal associations between sarcopenia, sarcopenia-defining parameters (muscle strength, mass and physical performance) and cognition in middle-aged and older men from the European Male Ageing Study (EMAS).

*Methodology:* EMAS is a multicenter cohort study of men aged 40-79 years(y) recruited from population registers in eight European centres. Cognitive functioning (Rey-Osterrieth Complex Figure, Camden Topographical Recognition Memory, Digit Symbol Substitution Test) and sarcopenia-defining parameters (muscle mass, gait speed, chair stand test and grip strength) were assessed at baseline and after a median follow-up of 4.3y. Sarcopenia was defined according to the EWGSOP2 criteria. In 3233 participants, cross-sectional associations between baseline gait speed, chair stand test and cognitive scores will be analyzed. In the Manchester and Leuven cohort (n=456), data are available on muscle mass and grip strength, allowing cross-sectional analyses between baseline cognitive scores, sarcopenia-defining parameters and prevalent sarcopenia in this subgroup. Longitudinally, predictive value of baseline cognition on functional decline and vice-versa will be examined. Linear and logistic regression will be used and adjusted for putative confounders.

*Results:* The main hypothesis is that prevalent sarcopenia or its outcomes are associated with lower cognitive performance. Analyses are ongoing and the results will be available soon.

*Conclusion:* This study might help to elucidate the chicken or the egg dilemma in the complex, ambiguous relationship sarcopenia-cognition.

### **The influence of hypertension management on frailty prevention among elderly aged 65 and over: a systematic review**

Orgesa Qipo ([orgesa.qipo@vub.be](mailto:orgesa.qipo@vub.be)), Aziz Debain, Ivan Bautmans

*Purpose:* A systematic review of PubMed and Web of Science databases was performed to provide pooled estimations of evidence regarding the influence of hypertension management on preventing the occurrence or progression of frailty in older people aged 65 and over.

*Methods:* Studies providing information on hypertension treatment and frailty association regardless of the study setting, or definition of hypertension and frailty were screened. Among the initial 2298 articles identified, 7 were included in the review.

*Results:* Three observational studies reassessed the association between frailty and hypertension. Two of them reported no relationship between Aldosterone Antagonists use and frailty prevention. No relationship between BP and incidence frailty

after adjustment for hypertension treatment was observed in two other articles. An indirect relationship was reported in the RCTs included. Higher AT11RaAb levels (control group), can lead to a generalized weakness/ frailty risk shown by a decrease in grip strength ( $r=-0.57$ ,  $p<0.005$ ) and walking speed ( $r=-0.47$ ,  $p<0.005$ ). No significant differences between the intervention group and the control one in frailty status after 12-weeks follow-up were observed after applying three different frailty measurement tools in the other RCT.

*Conclusions:* Hypertension and frailty occur together but whether the treatment with anti-hypertensive drugs modifies this relationship remains unclear and needs to be further investigated in studies with longer follow up.

### **Behandeling van acute locomotorische pijn bij de geriatrische patiënt**

Pauwelijn Verhoestraete ([pauwelijn.verhoestraete@ugent.be](mailto:pauwelijn.verhoestraete@ugent.be)), Wim Janssens

*Doel:* Tot op heden is er onvoldoende wetenschappelijke evidentie over de aanpak van acute pijn bij een geriatrische patiënt. Deze studie focust zich op de aanpak van acute locomotorische pijn in niet-operatieve setting bij de geriatrische patiënt en vergelijkt opioïden van WHO pijnladder trap II (tramadol) en III (oxycodone) naar effectiviteit en veiligheid.

*Methodologie:* Het betreft een multicentrische niet-geblindeerde prospectieve gerandomiseerde studie van 70-plussers. Patiënten werden opgenomen op de afdeling acute geriatrie met acute locomotorische pijn (inclusie binnen 72 uur na ontstaan pijn, numeric rating scale (NRS)  $\geq 5$ ). Patiënten dienden in staat te zijn tot informed consent, per orale inname van medicatie en driemaal per dag scoren op de NRS. Ze mochten voor opname geen zwakke of sterke opioïden innemen en geen chirurgie ondergaan. De patiënten werden gerandomiseerd in twee behandelingsarmen via een vooraf bepaalde sleutel (SAS systeem).

*Resultaten:* In totaal werden 49 patiënten geïncludeerd, waarvan 43 vrouwen, gemiddelde leeftijd 86 jaar (74 – 97 jaar). De meerderheid van de pijnklachten werd veroorzaakt door een fractuur. De gemiddelde NRS daalde significant op dag 2 in de totale populatie (NRS 3.7 dag 0 vs. 2.1 dag 2,  $p<0.001$ ), evenals in de groep van zwakke opioïden (NRS 3.7 dag 0 vs. 2.1 dag 2) als sterke opioïden (NRS 3.8 dag 0 vs. 2.0 dag 2). Er werd geen significant verschil gevonden tussen beide behandelingsgroepen. Nausea was significant meer aanwezig in de tramadolgroep ( $p 0.011$ ).

*Conclusie:* Beide opioïden hebben een vergelijkbaar pijnstillend effect. Tramadol gaat gepaard met meer nausea dan oxycodone.

### **The effect of exercise therapy on endogenous analgesia in knee osteoarthritis patients: a systematic review and meta-analysis**

Sofie Puts ([sofie.puts@vub.be](mailto:sofie.puts@vub.be)), Sander Vermeersch, Christopher Vander Aa, Laurence Leysen, David Beckwée, Jo Nijs, Ivan Bautmans

*Aim:* To summarize the literature regarding the effects of exercise therapy on endogenous analgesia in knee osteoarthritis patients (KOAP) in a systematic matter.

*Methods:* PubMed, Web Of Science, and Embase were systematically searched for studies investigating the acute and/or basal effects of exercises on endogenous analgesia in KOAP. If possible, a meta-analysis was performed. Risk of bias was scored using the Cochrane ROB 2.0 or ROBINS-I and strength of evidence was assessed by the GRADE approach.

*Results:* A total of 19 studies were included; 4 studies investigated pain thresholds after an acute bout of exercise, while 15 articles focused on basal levels of endogenous analgesia (as measured by pain thresholds ( $n=15$ ), – facilitation ( $n=3$ ), and – inhibition ( $n=2$ )). For the acute effects, a meta-analysis combining 2 studies demonstrated that KOAP did not become more tolerant for pressure pain than healthy controls immediately after resistance training ( $p>0.05$ ). Besides that, one study with moderate quality of evidence showed that exercising KOAP had higher pain thresholds than non-exercising KOAP immediately after exercise ( $p<0.05$ ). For the basal effects, a meta-analysis combining three studies showed that strength training of 6-12

weeks caused a significant increase in pain thresholds in KOAP compared to non-exercising KOAP ( $p < 0.05$ ).

*Conclusion:* Literature about this topic is scarce. Very low quality of evidence proved that strength training of at least 6 weeks is effective in increasing pain thresholds in KOAP. Moderate quality of evidence demonstrated that an acute bout of exercise effectively increases pain thresholds in KOAP.

### **Waarom kiezen voor Geriatrie? Een enquête gericht aan de Belgische ASO geriatrie**

Yie-Man Chong ([yie\\_man\\_c@hotmail.com](mailto:yie_man_c@hotmail.com)), Maaïke De Roo, Florence Potier, François-Xavier Sibille, Tim Rodrigus, Camille Nicolay, Marian Dejaeger

*Doel:* Met de vergrijzing van de bevolking neemt de nood aan geriateren toe. Het opzet van dit onderzoek is na te gaan wat drijfveren en beperkende factoren zijn voor assistenten in opleiding (ASO) geriatrie in hun keuze tot specialisatie.

*Methodologie:* Een online enquête werd naar alle Belgische ASO's geriatrie verstuurd. De antwoorden werden geanalyseerd via beschrijvende statistiek.

*Resultaten:* In totaal hebben 22 assistenten de enquête ingevuld (op 65 ASO's). Elf hebben de keuze voor geriatrie gemaakt in hun stagejaar en de andere helft als jongerejaars ASO interne geneeskunde. Respectievelijk 50% ( $n=11$ ) en 77% ( $n=17$ ) hebben een rotatie gehad op geriatrie als stagiair en/of als ASO interne. Vooral de werk karakteristieken zijn bepalend voor hun keuze. De brede algemene geneeskunde die variatie biedt en de holistische benadering zijn de meest aangehaalde redenen waarom men voor geriatrie kiest (63%,  $n=14$ ). De meest frequent geciteerde negatieve aspecten in beide groepen is 'familie' (i.e. gesprekken/complexere familiale situaties/veeleisende families) (27%,  $n=6$ ), gevolgd door 'beperkt potentieel voor privé praktijk en 'consultatie' ( $n=2$ ) en 'op neergekeken worden' ( $n=2$ ).

*Conclusie:* Een deel van de ASO heeft zijn keuze al gemaakt in het stagejaar, het andere deel als ASO interne. Dit wijst op het belang van alle stagiairs en assistenten een stage te laten doorlopen op geriatrie. Het omgaan met familiale kwesties is het meest aangehaalde negatieve aspect, misschien is dit een aandachtspunt dat verder uitgediept kan worden in de opleiding. Daarnaast geldt in de Franse gemeenschap een examen voor de specialisatie geriatrie, wat mogelijks een belangrijke obstakel vormt.

## **NIET MEDISCHE ABSTRACTS**

### **Functional status in frail older patients with cancer: a multicenter observational study**

Cindy Kenis ([cindy.kenis@uzleuven.be](mailto:cindy.kenis@uzleuven.be)), Glen Meert, Johan Flamaing, Jean-Pierre Lobelle, Koen Milisen, Hans Wildiers, Lore Decoster

*Objectives:* To examine functional status (FS) and its evolution in frail older patients with cancer and investigate characteristics associated with functional decline.

*Methods:* Secondary data-analysis focusing on FS, of a large prospective multicenter observational cohort study (22 Belgian hospitals; November 2012-February 2015).

Patients  $\geq 70$  years, with a solid tumor, and a frailty profile based on the G8 screening tool (score  $\leq 14$ ) were included. A geriatric assessment was performed including evaluation of FS. At follow-up, FS was reassessed. Univariable/multivariable analyses were used to identify predictive factors.

*Results:* At baseline, 3153 (59.6%) patients were dependent for ADL, whereas at follow-up, 2110 (61.7%) patients were dependent. Functional decline was observed in 23.8% of patients. Also at baseline, 3582 (68.4%) were dependent for IADL, whereas at follow-up, 2595 (76.5%) of patients were dependent. Functional decline in IADL was observed in 41.0% of patients. In multivariable analysis, disease stage III or IV, falls history, and FS measured by IADL were predictive factors for functional decline in both ADL and IADL. Other predictive factors for functional decline in ADL are polypharmacy, ECOG-PS 2-4, and

cognitive decline and for functional decline in IADL, female gender, living alone, no surgery, fatigue, and risk for depression.

*Conclusion:* Taking into account the high prevalence of functional impairments and functional decline within the frail older population with cancer, integrating FS assessment in the routine care plan should be standard of care. It allows to perform directed interventions and can subsequently limit the risk of functional decline as much as possible.

### **Falls and fall-related injuries and their predictive factors in frail older patients with cancer**

Cindy Kenis ([cindy.kenis@uzleuven.be](mailto:cindy.kenis@uzleuven.be)), Lore Decoster, Johan Flamaing, Jessie De Cock, Jean-Pierre Lobelle, Hans Wildiers, Koen Milisen

*Objectives:* To investigate the incidence and predictive factors for falls and fall-related injuries in frail older persons with cancer.

*Methods:* Secondary data analysis from data previously collected in a large prospective observational cohort study in older persons with cancer (22 Belgian hospitals; November 2012-February 2015). Patients  $\geq 70$  years with a malignant tumor and a frailty profile based on an abnormal G8 score were included upon treatment decision and evaluated with a Geriatric Assessment (GA). At follow-up, data on falls and fall-related injuries were documented.

*Results:* At baseline 2141 (37.2%) of 5759 included patients reported at least one fall in the past 12 months, 1427 patients (66.7%) sustained an injury. Fall-related data of 3681 patients were available at follow-up and at least one fall was reported by 769 patients (20.9%) at follow-up, of whom 289 (37.6%) fell more than once and a fall-related injury was reported by 484 patients (62.9%). Fear of falling was reported in 47.4% and 55.6% of the patients at baseline and follow-up respectively. In multivariable analysis, gender and falls history in the past 12 months were predictive factors for both falls/fall-related injuries at follow-up. Other predictive factors for falls, were risk for depression, cognitive decline, dependency in activities of daily living, fear of falling, and use of professional home care.

*Conclusion:* Given the high number of falls and fall-related injuries and high prevalence of fear of falling, multifactorial falls risk assessment and management programs should be integrated in the care of frail older persons with cancer.

### **The Content and Effectiveness of Empowerment-Oriented Interventions for Informal Caregivers of Community-Dwelling Older Adults: A Systematic Review**

Eveline Raemdonck ([Eveline.Denise.L.Raemdonck@vub.be](mailto:Eveline.Denise.L.Raemdonck@vub.be)), Deborah Lambotte, Nico De Witte, Ellen Gorus

*Objectives:* Taking care for older adults can place informal caregivers at risk for developing health problems. Therefore, interventions aiming to empower informal caregivers have been developed. Empowerment refers to a health promotion process including strategies to improve informal caregivers' self-care behaviours, stress-management, and caregiving skills. In literature, empowerment-oriented interventions often target subsamples of informal caregivers defined through the care receiver's condition. These interventions, however, do not adequately capture the complexity of care needs and might even exclude informal caregivers taking care for older people without a specific or with a subthreshold condition. Therefore, the aim of this systematic review is to provide an overview of the content and effectiveness of empowerment-oriented interventions directed at informal caregivers of community-dwelling older adults.

*Methods:* Following the PRISMA guidelines, a systematic review was performed by searching the following databases: PubMed, PsycINFO, EMBASE, and Web of Science.

*Results:* From a total of 6,252 unique publications, 12 intervention studies, of which seven randomized controlled trials, were eligible for inclusion. According to the Mixed Methods Appraisal Tool, eight studies scored poor. The intervention studies under review represented different domains of empowerment, with cultivation of positive feelings being the most prevalent one. Social participation and physical health received little attention in interventions. Although no adverse intervention effects were observed, the studies reported mixed results with 55 positive and 46 neutral effects.

*Discussion:* The limited number and poor quality of studies emphasize the need for future research investigating the



effectiveness of empowerment-oriented interventions targeting informal caregivers of older adults.

### **More insight into influential factors on depression care strategies in nursing homes: Preliminary results of a meta-analysis**

Ine Declercq ([ine.declercq@radboudumc.nl](mailto:ine.declercq@radboudumc.nl)), Roeslan Leontjevas, Patricia De Vriendt, Debby Gerritsen, Susan Van Hooren

*Background:* Depression is common among long term care (LTC) residents and has a considerable impact on their quality of life. Therefore, there has been an increased interest in interventions aiming at the reduction of depression among LTC residents. These interventions could be described as formal depression care and include psychosocial (e.g., Exercise), psychotherapeutic (e.g., Reminiscence) and/or (neuro-)biological interventions (e.g., psychopharmacotherapy). Previous research on the effectiveness of formal depression care suggests that treatments should be more individually tailored. Therefore, insight in moderator effects is needed to better understand and better match treatments to specific groups of LTC residents.

*Objectives:* The aim of this study is to provide insight into (1) the relative effectiveness of interventions, (2) the influence of residents' characteristics (e.g., residents with cognitive impairment) and/or (3) the influence of contextual factors (e.g., group-based therapy) which may have an impact on the effectiveness of interventions.

*Eligibility criteria:* Various databases are searched using a predefined search string. We only include a) randomized controlled trials investigating the use of formal depression treatments (independent variable), b) among LTC residents and, c) having used a standardized measurement tool for, d) depression (dependent variable).

*Method:* A random-effects model will be used to calculate the pooled standardized mean difference (SMD) and to assess the strength of the effects of formal depression treatments on depression. Relative effect sizes will be assessed using a network meta-analysis.

*Conclusion:* To better match treatments to LTC residents, more insight into the effectiveness, moderator effects and core components of the applied interventions is needed.

### **Digitale exclusie bij ouderen: identificatie van niet-internetgebruikers tussen 2004 en 2021 op basis van socio-demografische kenmerken**

Jorrit Campens ([jorrit.campens@hogent.be](mailto:jorrit.campens@hogent.be)), Werner Schirmer, Anina Vercruyssen, Nico De Witte

*Objectives:* Ondanks de toenemende digitalisering, zijn er nog altijd minder ouderen dan jongeren online. Deze studie heeft als doel om op basis van socio-demografische kenmerken subgroepen van niet-internetgebruikers te identificeren bij zestigplussers.

*Methods :* Deze studie maakt gebruik van kwantitatieve gegevens van de Ouderenbehoefteonderzoeken (Belgian Ageing Studies). De steekproef bestaat uit 64.553 zestigplussers. Geslacht, leeftijd, opleidingsniveau, maandinkomen en burgerlijke staat werden bevroegd, alsook de frequentie van internetgebruik. Chi-kwadraat-toetsen en logistische regressieanalyses werden uitgevoerd om het verband tussen de socio-demografische kenmerken en internetgebruik te onderzoeken. Met CHAID (Chi-squared Automatic Interaction Detector)-analyses werden subgroepen van niet-internetgebruikers geïdentificeerd.

*Results:* Regressieanalyses geven aan dat vrouwen, de oudste ouderen (80-plussers), de laagst opgeleiden en personen in de laagste inkomensklasse minder kans hebben om internetgebruiker te zijn, wat een consistente trend is tussen 2004 en 2021. Uit CHAID-analyses blijkt dat opleidingsniveau en leeftijd tussen 2004 en 2016 respectievelijk de belangrijkste en op één na belangrijkste voorspeller van niet-internetgebruik zijn, terwijl leeftijd sinds 2016 de belangrijkste voorspeller is. Daarnaast is inkomen de derde belangrijkste voorspeller van niet-internetgebruik, en dit sinds 2004. Het hoogste percentage niet-gebruikers (98,6%) is waar te nemen bij personen die minimaal tachtig jaar zijn, met een maandinkomen van maximaal 999 euro en maximaal lager onderwijs genoten hebben.

*Conclusion:* Tussen 2004 en 2021 zijn leeftijd, opleidingsniveau en inkomen de belangrijkste voorspellers van niet-internetgebruik bij ouderen. Deze socio-demografische kenmerken laten identificatie toe van subgroepen bij wie de prevalentie van niet-internetgebruik tot drie keer zo hoog is als de prevalentie in de ouderenbevolking in het algemeen.

### **Team-based improvement in acute geriatric care: A 2-year action-based intervention study on sustainable quality of interprofessional collaboration**

Karen Versluys ([karen.versluys@uzgent.be](mailto:karen.versluys@uzgent.be)), Ruth Piers, Nele Van Den Noortgate, André Vyt

*Purpose:* Realising an enduring improvement focused on quality of interprofessional team meetings in acute geriatric care over a longer time period compared with a control group.

*Methods:* During two years, 7 teams of acute geriatric care in hospitals implemented actions optimizing interprofessional collaboration, aimed at improving quality of care. Team-based self-assessments with IPEQS were organized as pretest (T0) in year 1, as posttest (T1) one year later, and as follow-up (T2) again one year later.

Following the pretest team leaders engaged in selecting goals of improvement and installing working methods, adapted to their needs and context. Team leaders were coached by participating in two supportive peer sessions and 4 one-to-one interviews, sharing experiences and reporting about progressions or barriers in implementing change. A control group of 4 teams participated in T0 and T1 test.

*Results:* The intervention group experienced significant improvement in IPEQS-S. All teams in the intervention group achieved higher index in T2 compared to T0. One team had a backset in T1 but caught up with a higher score in T2. In the control group, results were mixed. Indexes of IPEQS-TP and IPEQS-TR, based on perceptions of the quality of 4 team meetings recently held, were similar to the IPEQS-S index, corroborating the findings.

*Conclusion:* The study points out that quality of team functioning and quality of team meetings, as measured by perception of team members, can be improved or sustained by focusing on implementing working methods and tools supporting the quality of interprofessional collaboration.

### **Medication management deficiencies in geriatric patients with polypharmacy after hospital discharge**

Laura Mortelmans ([laura.mortelmans@uantwerpen.be](mailto:laura.mortelmans@uantwerpen.be)), Elyne De Baetselier, Eva Goossens, Tinne Dilles

*Purpose:* This study aimed to evaluate post-discharge medication self-management, to describe problems encountered by geriatric patients with polypharmacy in medication self-management and to determine factors related to post-discharge medication management deficiencies.

*Methods:* A cross-sectional study was conducted in twelve Flemish hospitals. At the day of discharge, the patient's geriatric risk profile was determined and the medication schedule was copied to collect data about patients' medication use. During a home visit two to five days post-discharge, patients were questioned about medication management using the Medication Management Instrument for Deficiencies in the Elderly and a self-developed questionnaire.

*Results:* Of 400 participants, 70% did fully self-manage their medication at home after hospital discharge. Approximately one in two patients with polypharmacy felt insufficiently prepared to self-manage medication after hospital discharge. Patients had a mean of four different deficiencies in post-discharge medication management (range 0–10). Knowledge-related deficiencies were most common (mean 3.1 [SD 1.8]) in comparison to deficiencies related to the functional ability (mean 0.2 [SD 0.6]) and deficiencies in obtaining medication (mean 0.4 [SD 0.6]). The number of prescribed medicines at discharge (OR=1.19; 95% CI [1.05, 1.35]) and in-hospital provision of medication management by a nurse (OR=2.42; 95% CI [1.21, 4.82]) were found to significantly predict the occurrence of post-discharge medication management deficiencies.

*Conclusions:* This study identified problems related to post-discharge medication self-management in geriatric patients with

polypharmacy. Improvements in in-hospital preparation and medication self-management support by healthcare providers could avoid the development of problems at home.

### **Validity and Reliability of eforto®: a Smart Self-Assessment System for Grip Work**

Myrthe M. Swart ([myrthe.swart@radboudumc.nl](mailto:myrthe.swart@radboudumc.nl)), Liza De Dobbeleer, Merle A.J. Geerds, Remco J. Baggen, Anne-Jet S. Jansen, Joachim Vlieghe, Rudi Tielemans, Hugo Silva, Siddhartha Lieten, Kurt Barbé, Geeske Peeters, Miriam M.R. Vollenbroek-Hutten, René J. F. Melis, and Ivan Bautmans

*Purpose:* It is important to detect early symptoms of intrinsic capacity decline. We developed a smart (self-) assessment tool that measures muscle fatigability as an early indicator for loss of intrinsic capacity called eforto®. Eforto® consists of a rubber bulb for squeezing, wirelessly connected to a smartphone application. The aim was to evaluate the validity and reliability of the eforto® system to measure muscle fatigability.

*Methods:* Community-dwelling older persons (n=61), geriatric inpatients (n=26) and hip fracture patients (n=25) were evaluated for fatigue resistance (FR), measured as the time for the sustained grip strength (GS) to drop below 50% of the maximum GS, and grip work (GW) as area under decay curve. The GW of community-dwellers measured with eforto® was compared against a standard analog system (Martin Vigorimeter, MV) to assess criterion validity. For six consecutive days community-dwellers used eforto® as a self-assessment at home to test intra-rater reliability. Hospitalized patients were tested twice on the same day by two different professionals to test inter-rater reliability.

*Results:* Criterion validity was supported by good to excellent correlations between eforto® and MV for muscle fatigability (FR  $r=0.81$  and GW  $r=0.73$ ). Inter-rater and intra-rater reliability for GW were moderate to excellent (intra-class correlation: 0.59-0.94). The inter-rater standard error of measurement was small for geriatric inpatients and hip fracture patients (224.45 and 386.46 kPa\*s), but somewhat higher comparing community-dwellers' self-assessment and professional assessment (661.50 kPa\*s).

*Conclusion:* The results support the implementation of eforto® for repeated (self-)monitoring of muscle fatigability as a measure of intrinsic capacity.

### **Digital skills of older dialysis patients: the perception of the professionals**

Vander Mynsbrugge Tara ([tara.vandermynsbrugge@arteveldehs.be](mailto:tara.vandermynsbrugge@arteveldehs.be)), Vanbosseghem Ruben, Van der Vorst Christophe, Glibert Adriaan, Van Wijmeersch Jan-Frederik, De Vriendt Patricia

*Introduction:* In Belgium, 7000 persons receive dialysis. The majority is 65+. Although dialysis patients are familiar with the medical treatment, they are less informed about the impact of dialysis on their meaningful activities (MA). Living one's life with dialysis is challenging. While occupational therapy (OT) is the profession to support MA, few dialysis centers employ an OT. Smart technology can be an alternative for OT but for this to be successful, we need to map the digital skills of older dialysis patients.

*Method:* To obtain insight in how health-care professionals assess the digital skills of their older patients, an online survey was sent to all dialysis centers in Flanders (n=29).

*Results:* Five nephrologists, nine head nurses and two nurses completed the questionnaire. Patients mostly use smartphones and tablets in the dialysis centers and at home. Laptops are not used frequently by patients. According to the respondents 67% of the patients have adequate to good digital, and 33% bad or very bad skills.

Most respondents (83%) believe in an online tool to support patients but indicate the following barriers: not enough devices available at the centers, lack of professional support during the dialysis process, cognitive problems and/or physical problems in patients, and resistance towards the tool.

*Conclusion:* Caregivers estimate that dialysis patients have adequate to good skills. The study results indicate that there is a

readiness to use smart technology to enable MA. Nevertheless, attention must be paid to the barriers to smart technology for older dialysis patients.

### **A consensus statement on minimum operational standards for geriatric emergency care in Belgium: a modified Delphi study**

Pieter Heeren ([pieter.heeren@kuleuven.be](mailto:pieter.heeren@kuleuven.be)), Farah Islam, Didier Desruelles, Marc Sabbe, Johan Flamaing, Koen Milisen

*Purpose:* As emergency department (ED) leaders started integrating geriatric emergency guidelines on a facultative basis, important variations have emerged between EDs in care for older patients. The aim of this study was to establish a clinical consensus on minimum operational standards for geriatric ED care in Belgium.

*Methodology:* A 20-person expert panel participated in a two-stage modified Delphi study. In stage 1, an online survey was conducted to identify and define all possible elements of geriatric emergency care. Next, in stage 2, an online survey and online expert panel meeting were organized consecutively to determine which elements should be minimum operational standards.

*Results:* Between March 2020 and February 2021, the expert panel developed a broad consensus including 10 statements focusing on the target population, specific goals, availability of geriatric practitioners and quality assurance. In addition, the expert panel also determined which protocols, materials and accommodation criteria should be available in conventional EDs (39 standards) and in observational EDs (57 standards).

*Conclusion:* This study presents a consensus on minimum operational standards for geriatric emergency care specific for the Belgian healthcare system. These findings may serve as a starting point towards broadly supported standards of care stipulated by law.

### **A systematic review on strategies for the implementation of multifactorial falls prevention interventions in community-dwelling older persons**

Sara Vandervelde ([sara.vandervelde@kuleuven.be](mailto:sara.vandervelde@kuleuven.be)), Ellen Vlaeyen, Bernadette Dierckx de Casterlé, Johan Flamaing, Sien Vally, Joris Poels, Julie Meurrens, Goedele Belaen, Margot Himpe, Koen Milisen

*Purpose of the study:* 24 to 40% of the community-dwelling older persons fall annually, of which 21 to 45% are recurrent fallers. National and international guidelines recommend multifactorial falls prevention interventions. These interventions are complex to implement into practice. This review aims to give an overview of strategies used for implementing multifactorial falls prevention interventions in community-dwelling older persons.

*Methods:* A search in PubMed including MEDLINE, CINAHL, EMBASE, Web of Science and Cochrane Library was performed until 18 May 2020. The process of screening, selection, sensitivity analyses, data collection and data synthesis was executed by two independent reviewers. Disagreements were resolved by consulting a third reviewer. The protocol has been registered in PROSPERO (CRD42020187450) and follows the PRISMA Statement. A narrative synthesis was conducted and implementation strategies were reported following Proctor et al.'s (2013) guideline and the Taxonomy of Behavioral Change Methods of Kok et al. (2016).

*Results:* Twenty articles (fifteen studies) were included. The majority of the studies (n=13) combined implementation strategies. The most frequently used strategies at individual level were 'tailoring', 'personalize risk' and 'active learning'. At environmental level, the most common strategies were 'technical assistance', 'use of lay health workers, peer education', 'participatory problem solving', 'increasing stakeholders influence' and 'forming coalitions'. In total, nine studies described theories behind the implementation strategies.

*Conclusion:* This review contributes to the knowledge of implementing multifactorial falls prevention interventions in the community. The results emphasize the need to use guidelines, taxonomies, theory, evidence and context to develop and describe implementation strategies.

### **Influence of COVID-19 countermeasures on quality of life and meaningful activities in community dwelling older adults**

Stijn De Baets ([stijn.de.baets@vub.be](mailto:stijn.de.baets@vub.be)), Axelle Costenoble, Patricia De Vriendt

Vrije Universiteit Brussel

*Goal:* Due to the Coronavirus 2019, the Belgian government declared on March 3rd, 2020, a lockdown resulting in requirements that affected strongly daily life. In particular older individuals were at higher risk of developing infection and had to keep social distancing. This study assumed less engagement in meaningful activities and a decrease in Quality Of Life (QoL) during lockdown.

*Methods:* Two hundred fifteen healthy older individuals ( $\geq 80$ ) (117M/98F) showing no acute pathology, no cognitive limitations (MMSE $>23/30$ ), no immobility, community-dwelling, completed a COVID-19 questionnaire; encompassing the simple frail scale, Engagement in Meaningful Activities Questionnaire (EMAS) and questions regarding daily activities and QoL.

*Results:* Based on the simple frail scale, 118 participants were robust, 97 non-robust. QoL during lockdown showed a decrease (before 4.223; SD.701 vs. 4.056;SD.759;  $p \leq .01$ ). Differences were detected between the robust and non-robust participants during the 'lockdown' for QoL (4.16;SD.79 vs. 3.93;SD .70;  $p \leq .05$ ), taking care of oneself (3.27; SD.71 vs. 3.00;SD.78;  $p \leq .05$ ), feeling competent (2.95;SD.79 vs. 2.48;SD.95;  $p \leq .01$ ), experiencing pleasure (3.26;SD.76 vs. 2.95;SD.74;  $p \leq .01$ ), feeling satisfaction (3.22;SD.71 vs. 2.85;SD.88;  $p \leq .01$ ). The EMAS also showed a significant difference (35.83; SD6.76 vs. 32.18; SD7.87;  $p \leq .01$ ).

*Conclusion:* For all, QoL decreased during lockdown. The non-robust group showed a lower score regarding almost all variables during the lockdown compared to the robust counterparts. Insights from this study can be taken into account during future lockdown measures in case of pandemics.

### **Het gebruik van gepersonaliseerde soundscapes in de zorg voor personen met dementie**

Tara Vander Mynsbrugge ([tara.vandermynsbrugge@arteveldehs.be](mailto:tara.vandermynsbrugge@arteveldehs.be)), Dominique Van De Velde, Toon De Pessemier, Pieter Thomas, Dick Botteldooren, Paul Devos, Patricia De Vriendt

Behavioral changes (BC) are common in people with dementia (PWD) and impact their quality of live, also of their proxies. This requires evidence based approaches. Adapting the environment is a commonly used approach for BC, yet no strategies take the noise environment into account.

This project focuses on the use of soundscapes in the care for people with dementia. A soundscape is an acoustic environment as perceived or experienced and/or understood by a person, in a specific context. In this project a soundscape exist of noises (not music) that are orientating in time and create a feeling of safety, and follows the persons' day routine and is rooted in his/her life history.

During this project six nursing homes (spread over Flanders) served as living lab to experiment with the soundscapes. Individual soundscapes were created for 3 residents in each nursing home. Total time of each experiment was 8 weeks, including a premeeting, 4 weeks of intervention (soundscape hearable), post meeting and after 2 weeks a follow-up meeting. Qualitative data was collected through diaries and a focusgroup at the end. Quantitative data was collected through the NeuroPsychiatric Inventory for Nursing Home (NPI-NH)

A significant decrease was noticed in the number of BC from 5 (2.08; 2-9) to 3,26 (2.45; 0-8) and on the frequency and severity of the BC from 29,84 (19.90; 5-58) to 18,95 (15.88; 0-63). Also, caregivers reported less emotional distress: the mean score

11,47 (6.13; 0-21) decreased to 8 (5.86; 0-19) though not significant.

Results were promising and suggest that soundscapes could be used to decrease BC in PwD. The use of soundscapes in this way, in healthcare is new and innovating and should be further explored.

### **Role-management in patients undergoing Renal Replacement Therapy. Development of an intervention programme**

Timothy Moreels ([Timothy.Moreels@ugent.be](mailto:Timothy.Moreels@ugent.be)), Dominique Van de Velde, Karsten Van den Wyngaert, Wim Biesen, Patricia De Vriendt

*Introduction:* The prevalence of chronic kidney disease is increasing worldwide, particularly affecting older adults. It is a complex progressive disease that in its end-stage necessitates renal replacement therapy (RRT) through kidney transplantation or dialysis. It carries a high disease and treatment burden, impacting patients' 'life participation' substantially. Self-management, or the process through which patients are able to cope with the disease in the context of their daily lives, is essential in patients undergoing RRT. Though self-management includes medical-, emotional-, and role-management, current intervention programmes mainly focus on medical-management and to a lesser degree emotional-management. Role-management (i.e. how to fulfil life roles, engage in meaningful activity and social relations) is pivotal in supporting 'life participation', yet evidence in RRT-care is lacking.

*Method:* This protocol, based on Medical Research Council guidelines, guides the development of a role-management programme that can be deployed in a nephrology department. First, a systematic review will examine current evidence. Second, an ethnographic study will explore practical theory. Third, an initial role-management programme will be developed based on the previous phases, aided by expert/stakeholder perspectives. A usability study will assess feasibility. Finally, a definite version of the programme will be evaluated through a randomized controlled trial.

*Conclusion:* In recent years, 'life participation' has become an increasingly important outcome in RRT. It carries the highest priority for patients and caregivers, contrasting the current focus on medical priorities in standard care. Patients want to stay as meaningfully active as possible, as long as possible. A role-management programme could prove beneficial.

### **Geriatric screening and assessment among older patients with cancer: evaluation of long-term outcomes in a multicentric cohort of > 7,000 patients**

Victoria Depoorter ([victoria.depoorter@kuleuven.be](mailto:victoria.depoorter@kuleuven.be)) Katrijn Vanschoenbeek, Lore Decoster, Harlinde De Schutter, Koen Milisen, Johan Flamaing, Cindy Kenis, Freija Verdoodt, Hans Wildiers

*Purpose:* Little is known about the predictive value of geriatric screening and assessment (GS/GA) for long-term outcomes in older patients with cancer. The current study aims to explore the association between GS/GA results and long-term outcomes, specifically the care trajectory following diagnosis, end-of-life care and survival, through linkage of clinical and population-based databases.

*Methods:* A retrospective cohort study of older patients with newly diagnosed cancer was set-up by combining clinical data, population-based cancer registry data and population-based administrative data from four different sources. Clinical data was derived from a large prospectively collected multicentric Belgian cohort in which G8 geriatric screening was performed, followed by GA in case of an abnormal result (G8 score  $\leq 14$ ). This clinical data was linked to population-based data for longitudinal follow-up.

*Results:* After linkage, 7,556 older patients with a new cancer diagnosis were identified. In this cohort, 6,972 patients (92.3%) were diagnosed with a solid tumor and 584 patients (7.7%) with a hematologic malignancy. Breast cancer, colon cancer and lung cancer were the most common diagnoses. The median age was 78 (range: 70–100) years and 4,365 patients (57.8%) were female. 5,129 patients (67.9%) had an abnormal G8 score ( $\leq 14$ ) at baseline. Median follow-up time for survival was 6.5 years, and 4,982 patients (66.0%) died during follow-up. Extensive outcome analysis is ongoing.

*Conclusion:* This is the first study investigating the association between GS/GA and long-term outcomes in such a large cohort, using linked clinical and population-based databases. Primary results will be presented at the meeting.

### **COVID-19 lockdown impacted the meaningfulness of daily activities and mental health in Belgian adults 50+**

Ellen Cruyt ([ellen.cruyt@ugent.be](mailto:ellen.cruyt@ugent.be)), Patricia De Vriendt, Dominique Van de Velde

*Purpose:* Engagement in meaningful activities (MA) is significantly associated with health, quality of life, morbidity and mortality. In this study we evaluated the meaningfulness of activities and mental health in particular for men and women 50 y and older.

*Methods:* A web survey during the first lockdown in Belgium that gauged activities, mental health, meaning in activities, resilience, has been carried out. For this study, only the sample of 420 people 50+ (237 women/183 men) were used.

*Results:* Women scored significantly lower in engaging in MA as measured by the Engagement in Meaningful Activities Scale (EMAS) (31.36; sd 7.09 versus 33.78; sd 6.35;  $p < .001$ ) and experienced worse mental health measured by the General Health Questionnaire (GHQ) (13.80; sd 6.70 versus 11.59; sd 5.87;  $p < .000$ ) than men 50+. The MA women attach more importance to (e.g. social activities) which could no longer be continued while the typical male activities still could be practiced (even more).

Although EMAS and GHQ were correlated (.510 and .540 ( $p < .000$ )), MA didn't explain mental health, instead the variables resilience, living situation, gender, having a caregiver, location of living explained 60% of the variance in mental health.

*Conclusion:* It was obvious that 50+ women found less meaning in their activities during corona and experienced less mental health compared to the men. It appeared when you have good resilience, living together, no (need of a) caregiver, living rural, your mental health was good during the lockdown.

### **Resident and informal caregiver involvement in medication-related decision-making and the medicines' pathway in nursing homes**

Amber Damiaens ([amber.damiaens@kuleuven.be](mailto:amber.damiaens@kuleuven.be)), Ann Van Hecke, Jan De Lepeleire, Veerle Foulon

*Purpose:* Research on person-centered care regarding medication decision-making and the medicines' pathway in nursing homes is lacking. This study aimed to provide an understanding of healthcare professionals' attitudes and perspectives on current resident and informal caregiver involvement in medication decision-making and the medicines' pathway in nursing homes.

*Methods:* Semi-structured interviews were performed with 25 healthcare professionals from four nursing homes. Interview transcripts were analyzed by means of an inductive thematic framework.

*Results:* Three overarching domains were identified: 1) features of, 2) drivers and barriers for, and 3) perceived consequences of resident and informal caregiver involvement in medication decision-making and the medicines' pathway. Involvement was mainly initiated by residents and informal caregivers themselves, pointing towards information and participation needs among both groups. Actions of healthcare professionals towards resident and informal caregiver involvement were mainly reactive and fragmentary, and were influenced by their perception of residents and informal caregivers' desire and capabilities to be involved, the perception of their own professional role, and by organizational factors such as the nursing home's philosophy. Furthermore, organizational concerns tempered the motivation to provide residents and informal caregivers with more medication-related responsibilities.

*Conclusions:* Resident and informal caregiver involvement in medication decision-making and the medicines' pathway remains limited in nursing homes. Information and participation needs of residents and informal caregivers were not fully acknowledged by healthcare professionals. Thus, we can conclude that there is a need for initiatives to create and improve awareness on opportunities for resident and informal caregiver involvement in medication decision-making and the medicines' pathway.

### **Goal-oriented care: bridging the gap between theory and practice with learnings from primary healthcare professionals**

Dagje Boeykens ([dagje.boeykens@ugent.be](mailto:dagje.boeykens@ugent.be)), Patricia De Vriendt, An De Sutter, Agnes Grudniewicz, Lies Lahousse, Peter Pype, Carolyn Steele Gray, Dominique Van de Velde, Pauline Boeckstaens

*Goal:* In a world wherein the prevalence of chronic conditions is increasing, the importance of a good primary care system cannot be underestimated. It is suggested to focus on the patients' goals which could be achieved by goal-oriented care (GOC). To gain an understanding on GOC, a concept analysis was conducted showing a stepwise approach of goal-elicitation, goal-setting, and goal-evaluation. This study moves beyond this theoretical understanding and aims to gain knowledge on how primary healthcare professionals operationalize GOC.

*Method:* A two-step approach is used to analyze 48 in-depth interviews of primary healthcare professionals of three different sites (Ghent, Ottawa, and Vermont). Firstly, the attributes of GOC were used as a framework to deductively analyze the interviews. Secondly, an inductive thematic analysis following Sundler et al. was performed to expand the theoretical knowledge.

*Results:* When looking at the data the attributes could be identified in practice. However such a linear approach in one-on-one interactions, as emerged from literature, could not be determined; the dynamic and iterative character of GOC should be more emphasized. The inductive analysis revealed three main themes: 1) involving the patients, 2) interprofessional collaboration, and 3) the use of tools or guidance.

*Conclusion:* These findings provided more insight in how professionals operationalize GOC and pointed to the development of tools or methods to support them in implementing GOC.

### **"Let's hope they do not put me in a nursing home" Experiences of community dwelling patients and their informal caregivers towards primary care**

Dagje Boeykens ([dagje.boeykens@ugent.be](mailto:dagje.boeykens@ugent.be)), Muhammed Mustafa Sirimsi, Lotte Timmermans, Maja Lopez Hartmann, Dominique Van de Velde, Patricia De Vriendt

*Purpose:* The increasing number of chronic conditions goes hand in hand with the ageing population leading to more older patients dealing with the consequences of their diseases. To develop strategies to strengthen chronic care management, based on a person-centered approach, insight into the care experiences of patients and their informal caregivers is required.

*Methods:* This study relies on a phenomenological-hermeneutical philosophy (Lindseth and Norberg) with in-depth interviews of sixteen patient-informal caregiver dyads (n=32 individuals). Dyads were recruited by a purposive, maximal variation



sampling. To elaborate on their experiences towards primary care, an open-ended interview guide was used.

*Results:* Dyads reflected on the importance of being autonomous, illustrated by performing meaningful and essential activities. To succeed, they needed support from a social environment, formal caregivers, and assistive devices. Throughout these activities and relationships, the personal values of the dyads should be mirrored. Dyads expected to be treated as an equal partner in characterized by an open communication wherein collaboration between them and formal caregivers was facilitated. This resulted in a description of good care as: 'listening and giving attention to what patients want, to what they strive for, and above all to endorse them in their autonomy in a supporting environment of a team of formal caregivers, family, and friends'.

*Conclusion:* To meet the dyads' preferences, they should be supported in self-management to deal with the consequences of their diseases. Therefore, care should be tailored to the meaningful life goals of the dyads and organized in an interprofessional context.

### **Aanraking in tijden van huidhonger**

Els Messelis (messelis.els@outlook.com)

*Goal:* Alle mensen – jong en oud – hebben nood aan affectieve aanrakingen, dit van de eerste zucht tot de laatste adem. Door COVID-19 hebben velen ondervonden wat het is om dierbaren niet te kunnen aanraken en om niet aangeraakt te worden. Veel mensen hebben echter geen dierbaren waar ze die menselijke warmte en nabijheid kunnen beleven. Velen voelen zich daardoor 'verdord' vanbinnen of vertellen over 'de eelt op hun ziel'. Nog anderen staan sceptisch tegenover aanraking omwille van diverse redenen: niet veilig of vermijgend gehecht, grensoverschrijdend gedrag,...

*Methods:* D.m.v. diepte-interviews hebben we bij individuen en professionals (20 in totaal) nagegaan welke plek huidhonger in hun leven en/of dat van hun cliënten, patiënten, bewoners heeft.

*Results:* Uit de diepte-interviews blijkt dat alle 20 geïnterviewden hun hart hebben opengezet rond het thema. De levensverhalen zijn een voor een beklijvend en taboedoorbrekend. Ze bieden daarnaast ook troost en inspiratie voor de lezer. De emotionele en sociale kracht verdient een gepaste aandacht in de zorg- en hulpverlening voor (kwetsbare) oudere volwassenen.

*Conclusion:* huidhonger is een nieuw woord voor een oud probleem. Dit thema op een gepaste manier opentrekken naar welzijn en zorg voor (kwetsbare) oudere volwassenen en hun begeleiders: dat is wat we nu volop aan het ontwikkelen zijn. De therapeutische kracht van aanraking is immers ook heel belangrijk.

### **A more comprehensive approach to counter depression among nursing home residents: Study protocol 'InFormeD'**

Ine Declercq ([ine.declercq@radboudumc.nl](mailto:ine.declercq@radboudumc.nl)), Roeslan Leontjevas, Susan Van Hooren, Patricia De Vriendt, Debby Gerritsen

*Background:* Depression is common among nursing home residents and has a considerable impact on their quality of life. Therefore, there has been an increased interest in interventions aiming at the reduction of depression among nursing home residents. These interventions could be categorized into formal and informal depression care. Formal care includes psychosocial, psychotherapeutic and/or (neuro-)biological interventions. Informal care can be provided by nursing home staff, alongside the formal care (e.g., letting sunlight into the room when one believes in the positive effects of daylight). Although many studies have been done about depression treatment in nursing homes, there is still a lack of insight into the effect of formal and informal depression care and the mutually reinforcing effects of those strategies on nursing home residents.

*Design:* Therefore, a six month cohort study will be conducted.

*Method:* Residents will be recruited in nursing homes across the Netherlands and Flanders (Belgium). To measure formal and informal care, newly developed tools will be cross-culturally validated: one to assess the provided formal care in nursing

homes, two tools for measuring the used informal strategies. Depression outcomes will be measured with the Geriatric Depression Scale, Cornell Scale for Depression in Dementia, and the Nijmegen-Observer-Rated Depression-scale). Baseline measurements and cross-sectional analyses will be performed and repeated after six months. The intended associations will be assessed using mixed models accounting for repeated measurements within the participants.

*Conclusion:* To develop a good depression care policy, a more comprehensive approach is needed and may benefit both residents and staff.

### **Usability and acceptance of the smart self-assessment “Fatigability in outcomes to monitor resilience targets in older persons’ FORTO**

Liza De Dobbeleer ([Liza.De.Dobbeleer@vub.be](mailto:Liza.De.Dobbeleer@vub.be)) Myrthe M., Merle A.J., Remco J., Anne-Jet S., Joachim Swart, Geerds, Baggen, Jansen, Vlieghe, Rudi Tielemans, Hugo Silva, Siddhartha Lieten, Kurt Barbé, Geeske Peeters, Miriam M.R. Vollenbroek-Hutten, René J.F. Melis, Ivan Bautmans

*Introduction:* We developed a smart (self-)assessment system “fatigability in outcomes to monitor resilience targets in older persons” (FORTO), consisting of a rubber bulb that is wirelessly connected to a smartphone-based application. The aim was to evaluate usability and acceptance of FORTO when older persons use it themselves at home to measure muscle fatigability.

*Methods:* Thirty community-dwelling persons aged 83-95 years performed self-tests of muscle fatigability ((fatigue resistance=time until grip strength decreased to 50% of its maximum during sustained maximal effort) and grip work (=area under the strength-time curve)) using FORTO. After an individual information session explaining how to use FORTO, participants performed the self-test daily during 1 week. Participants completed a questionnaire based on the Unified Theory of Acceptance and Use of Technology.

*Results:* Only two participants were unable to perform all tests due to inexperience with a smartphone. Although 48% of the participants did not consider themselves experienced in using a smartphone, almost 70% experienced FORTO easy in use. 55% of the participants expected a low effort, respectively 79% and 83% believed that FORTO will be useful and will provide better care for patients.

*Conclusion:* In general, participants felt confident using FORTO, which was experienced as an easy to use system. Moreover, they found the different functions well-integrated without contradictions in the system. Participants were convinced that most older people would be able to get rapidly acquainted with using FORTO.

### **Feasibility and acceptability of the OptiMEDs intervention: a complex intervention for multidisciplinary medication review in nursing homes, with ICT-**

Maarten Wauters ([maarten.wauters@uantwerpen.be](mailto:maarten.wauters@uantwerpen.be)), Tinne Dilles, Robert Vander Stichele, Monique Elseviers, Thierry Christiaens

*Background:* Potentially inappropriate medication use at old age can lead to increased health care usage and costs. Multifaceted complex interventions involving all health care professionals in the medication management process may be more likely to improve geriatric pharmacotherapy.

*Aim(s):* To investigate the feasibility and acceptability of the OptiMEDs intervention: a complex intervention aimed to hold a medication review (with input of nurses, pharmacists and general practitioners) supported by software for performing patient-specific side-effect monitoring and for recognizing potentially inappropriate medications (PIM).

*Methods:* Structured questionnaires were distributed among the nurses, general practitioners and pharmacists that used the OptiMEDs tool to measure feasibility aspects at the participation level (general satisfaction on the tool, content and user-friendliness on a scale from 1 to 10). At the level of acceptability an online-survey with the 10-item System Usability Scale (SUS) with a max. of 100 was dispensed among nurses.

*Results:* A total of 33 respondents (n=12 nurses, n=19 GPs and n=2 pharmacists) filled in the survey, out of a potential 76. The participation rate was lowest for the GPs (31.3%), and highest for the pharmacists (100.0%). The median age of the respondents was 49.5 years (range 26 – 69), and the majority was male (56.2%).

General satisfaction was high, with a median score of 8 (IQR 6-8). Users responded positive towards using the tool in the future (median 8, IQR 7 – 9) and would recommend it to their colleagues (median 8, IQR 6.5 – 8.5). Particularly GPs appreciated the cooperation with nurses during the medication review (median 8, IQR 7.5 – 9).

The mean SUS-score was 62.7 (SD: 16.6), with a moderate learnability score of 54.2 (SD: 18.7) and a good usability score of 69.5 (SD: 14.6).

*Discussion:* The use of the OptiMEDs tool is feasible and the tool is well accepted by the different health care workers involved in the medication review. A general implementation in Belgian nursing homes is highly recommended.

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## **Auteurs**

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