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Symposium 1

Loneliness

Chair: M. Aartsen

VU University, Amsterdam

Presentation 1.1

Loneliness and mental health in a representative sample of community-dwelling Spanish older adults

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Between 5 and 15% of the elderly report frequent feelings of loneliness, while 20–40% report occasionally having these feelings. Research is consistent in showing that loneliness is not innocuous: it is a risk factor for morbidity and mortality. Specifically, research seems to support loneliness as a risk factor for mental health problems in the elderly. The objective of this study is to analyze the prevalence of feelings of loneliness and the association of loneliness with mental health in a representative sample of elderly people. Participants in this study are 199 older adults (mean age = 75.1; S.D. = 6.45; 71.3% female), randomly selected from the census of the city of Salamanca, Spain. Feelings of loneliness were measured through a single item (“Do you find yourself feeling lonely?”). Mental health was measured through the Short Psychiatric Evaluation Schedule, and measures of perceived physical health and support were also included. The results show that a 17.1% of the sample reported feeling lonely sometimes and a 6.0% reported feeling lonely often. A regression model was tested for explaining mental health. The final model explained a 50% of variance of mental health. Socio-demographic, environmental factors and resources and health factors were included in the first four steps. Even though loneliness was included in the fifth step, it contributed significantly to the explanation of mental health (6%). Loneliness is associated with poorer mental health in elderly people, and satisfaction with frequency of social contacts with relatives and friends is a significant predictor of loneliness in older adults.

Presentation 1.2

Trajectories of loneliness: mapping changing patterns of loneliness over time

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The dynamic nature of loneliness in later life has been largely overlooked in the existing literature which has sought to establish the prevalence of, and risk factors for, loneliness. Longitudinal studies quantify how loneliness varies over periods of

time ranging from several years to 20+ years. Much less is understood about how the experience of loneliness may vary across seasons, different days of the week or various times in the day. This paper considers both long and short term variations in loneliness and how these interact. We undertook a survey of 30 participants aged 60+ and recorded levels of loneliness using both self report and the de Jong Gierveld scales, at 3 month intervals across a 12 month period . We also consider changes in loneliness for a 12 year period for 4,500 people aged 50+ included in waves 1 to 6 of the English longitudinal Survey of Ageing. Both data sets confirm that underpinning the apparently stable prevalence rates for loneliness there are four distinct populations: those who are consistently lonely; those with increasing and decreasing levels of loneliness and those who fluctuate into and out of loneliness. In this we consider how these different trajectories of loneliness combine to generate these prevalence rates and how they may influence the needs for different types of interventions.

Presentation 1.3

“Circle of friends” for Lonely, Older People

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Central Union for the Welfare of the Aged and University of Helsinki

Loneliness impairs health and well-being. The study aim was to create a new effective psychosocial group rehabilitation for lonely older people. First a randomized trial was conducted for subjects suffering from loneliness ($n = 235$; >74 y). Rehabilitation groups (8 participants/2 professional leaders) met once/week x 12 times. Intervention aimed to empower participants, and to promote their social engagement. Contents of groups included therapeutic writing, exercise or art. Psychological well-being and cognition improved significantly in the intervention group compared to the controls. Subjective health of the intervention participants improved which was reflected in decreased use of health services and in decreased mortality (HR 0.39, 95% CI 0.15 to 0.98) compared with controls. Since then 500 group leaders have received training on this model (“Circle-of-friends”) and >5,000 elderly have participated these groups. Ninety percent of participants feel their loneliness has been alleviated and >60% of groups continue on their own after rehabilitation is over.

Presentation 1.4

Hearing loss in older persons: Does the rate of decline affect loneliness and depression?

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Due to age-related hearing loss, older adults are challenged to adapt to ongoing hearing decline. This study aims to investigate whether the *rate* of hearing decline affects psychosocial health. Data from 1178 older (57–97 y) persons covering three measurements (7-y follow-up) of the Longitudinal Aging Study Amsterdam were used. Change scores (T_2-T_1; T_3-T_2) of hearing loss (speech-in-noise test) and social and emotional loneliness, and depression (all self-report scales) were incorporated into multilevel models. Faster increase in SRT (i.e., faster hearing loss) was significantly associated with more increase in loneliness, but only for persons with moderate hearing at baseline (emotional loneliness: $B = 0.073$; social loneliness: $B = 0.082$) and for persons who recently lost their partner (emotional loneliness: $B = 0.191$). No significant effects were found on depression. This study indicates that faster hearing decline causes increased loneliness in persons with already impaired hearing and in widow(er)s. Monitoring older persons’ hearing seems important and could be a relevant starting-point for loneliness prevention.

Symposium 2

Nutrition interventions for elderly people

Chairs: A. Haveman-Nies & S. Kremer

Wageningen UR

Presentation 2.1

Excerpts from Dutch public health professionals' experiences with malnutrition among the elderly.

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Background: Malnutrition among the elderly negatively affects both their health and quality of life. As implied by its variety of causes, malnutrition management needs to be multidisciplinary. This study therefore assessed diverse primary care and public health professionals' experiences with malnutrition among community-dwelling older adults.

Methods: Twenty-two Dutch professionals who are involved in care (e.g. GPs, nurses), nutrition (e.g. dietitians, meal service employees), or malnutrition research (i.e., researchers), were telephonically interviewed. The semi-structured interview guide elicited answers that were audiotaped and transcribed verbatim. With the qualitative analysis software MAXQDA, the interviews were coded using constant comparison and content analysis, upon which topics were allocated into themes.

Results: The findings are depicted by the following seven groups of experiences: (1) Nutrition behaviour among the elderly is subject to adverse changes; (2) Lack of malnutrition awareness among the elderly; (3) Limited malnutrition awareness among primary care professionals; (4) Uncertainty regarding the appropriate methods for malnutrition monitoring; (5) Limited awareness, time and priority among professionals are key barriers for adequate malnutrition monitoring; (6) Compliance to malnutrition treatment dependent on provided personalization and justification; (7) Effectiveness of malnutrition treatment dependent on timely implementation and evaluation.

Conclusion: Insufficient malnutrition awareness is implied to result in inadequate monitoring, which in turn is perceived as the bottleneck of timely malnutrition management. A coherent and feasible distribution of responsibilities regarding monitoring and treatment is desired. Addressing the professionals' experiences could be beneficial for the current national multidisciplinary malnutrition measures.

Presentation 2.2

Enjoying the meal – a multicomponent intervention among Dutch nursing home residents on meal enjoyment, appetite, nutritional and functional status, and quality of life

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Background: The aim of 'Enjoying the meal' was to investigate whether optimizing meal enjoyment enhances appetite, health and well-being of nursing home residents and whether this approach leads to a reduction in health care costs. The intervention focussed on improvements in four domains: the food product, the eating environment, the resident, and the nursing home staff. A process and effect evaluation was carried out.

Methods: The study population comprised 161 residents from eight nursing home locations. Four locations ($N = 85$) received a 6-month, tailored intervention which was developed in collaboration with the nursing home. The four other locations ($N = 76$) received usual care. A practice expert monitored and guided the implementation process. The effect evaluation consisted of repeated measurements (3×) of meal enjoyment, appetite, nutritional and functional status, and quality of life. Medicine and diet product use were recorded to assess the financial impact. The process evaluation consisted of questionnaires among nursing home staff and registration of implemented activities.

Results: Implementation was lower and slower than intended. The intervention led to significant improvements regarding the taste of the hot meal and the perceived amount of food choice, but no effects were seen for the longer-term outcome measures. In the location where medicine use was evaluated critically, a significant reduction in medicine use was observed.

Conclusion: The multicomponent intervention 'Enjoying the meal' showed potential to improve meal enjoyment. The intervention may have been implemented too slowly, not strong enough, or a longer duration was needed to establish effects on appetite, health and quality of life. The study yielded valuable insights and recommendations regarding optimizing mealtime procedures and cost reductions in nursing homes.

Presentation 2.3

Cater with care: how can food intake in hospitalized elderly be improved? Results from an observational study among patients with and without risk of malnutrition.

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Background: A key aspect of treating undernourished hospital patients is increasing their protein and energy intake. About 25% of the patients in Hospital Gelderse Vallei are at risk of undernutrition at admission. Most of these are elderly patients who receive an energy and protein enriched diet and oral nutritional supplements if needed. Still, a considerable part of these patients are unable to meet protein and energy requirements. The objective of this study was to gain insight in the protein and energy intake and dietary choices of hospitalized elderly both at risk of undernutrition and not at risk.

Methods: In this cross-sectional study, data from 80 hospitalized patients of 65 years and older were collected. Forty patients were at risk of undernutrition on admission, 40 were not, based on MUST-scores. During 4 days of hospitalisation their choices of foods and drinks were recorded. On the fourth day, a 24 h-recall was done to calculate protein and energy intake.

Results: We observed a significant difference in protein intake but not in energy intake between patients at risk and not at risk of undernutrition (1.03 g vs. 0.80 g of protein per kg BW; $P < 0.05$). Dairy products, cereals and cereal products, non-alcoholic beverages, and meat contributed the most to protein and energy intake.

Conclusion: Current treatment options for undernutrition do not seem sufficient for meeting energy and protein requirements in the majority of elderly patients. Enriching the foods and drinks they prefer with protein might be an effective new treatment strategy.

Presentation 2.4

Protein-enriched 'regular products' and their effect on protein intake in acutely hospitalized older adults; a randomized controlled trial

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Background: The objective of this study was to examine the effect of consuming protein-enriched bread and drinking yoghurt, replacing regular products, on protein intake of acutely hospitalized elderly (≥55 years).

Methods: This study was performed as a single blind randomized controlled trial in 47 hospitalized elderly, acutely admitted to the hospital. During three consecutive days participants received either ad libitum protein-enriched bread and drinking yoghurt or normal products as part of their daily meals. The protein-enriched bread contained 7 g and the normal bread 4 g

of protein per serving. For drinking yoghurt this was 20 g and 8 g of protein per serving respectively. Food intake of participants was measured and nutritional values were calculated according to the Dutch Food Composition Table. An independent samples t-test was used to compare protein intake between the intervention and control group.

Results: 45/47 participants were at risk of malnutrition (51.1%) or were malnourished (44.7%). Analyses illustrate a protein intake in the intervention group of 73 ± 33 g per day versus 60 ± 16 g in the control group ($p = 0.068$). Intervention patients had a mean protein intake of 1.1 g/kg/day, with 32% of the patients reaching the minimum requirement of 1.2 g/kg/day; in control patients this was 0.9 g/kg/day ($p = 0.097$) and 12% ($p = 0.154$).

Conclusion: The use of protein enriched bread and drinking yoghurt, consumed as part of regular meals, may be a promising, cheap and feasible solution to increase the protein intake of acutely ill, malnourished patients. It needs to be confirmed whether a longer-term use of these products in larger groups of patients will also result in better clinical outcome.

Presentation 2.5

Effects of the daily consumption of protein enriched bread and protein enriched drinking yoghurt on the total protein intake in elderly in a rehabilitation centre: a single blind randomised controlled trial

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Background: A sufficient amount of protein and an optimal protein distribution of 25–30 g per mealtime are essential components to prevent or treat sarcopenia. The objective of this study was to investigate the effects of protein enriched bread and protein enriched drinking yoghurt on the total protein intake in elderly, and the distribution of protein over the day.

Methods: A single blind RCT among elderly (mean age 78 ± 12.6 y) admitted to a rehabilitation centre after hospital discharge. Thirty-four patients were randomly assigned to a high protein diet (protein enriched bread/drinking yoghurt; $n = 17$) or a regular diet (regular bread/drinking yoghurt; $n = 17$) for 3 weeks. Intake was recorded meticulously and statistical differences were analyzed by Linear Mixed Models.

Results: Compared with controls, patients who received the protein enriched products had a significantly higher total protein intake (111.8 g/d vs 72.5 g/d (1.5 g/kg vs 1.1 g/kg), difference 39.4 g/d, $P < 0.001$) and quantities on the recommended level during the three mealtimes (30.7, 30.0 and 34.5 g/meal respectively), where the control group consumed quantities below the recommended level during breakfast (17.7 g/d) and lunch (18.8 g/d). The intake of products remained stable during the 3 weeks of study.

Conclusion: The use of protein enriched bread and drinking yoghurt, substituting regular products, results in a significant and persistent increased daily protein intake in elderly and an improved distribution of protein intake over the day. Whether this increased intake also enhances faster recovery needs to be studied.

Symposium 3

Life course approach to ageing: Examples from the adult life course epidemiology

Chairs: H.S.J. Picavet, S.H. van Oostrom & W.M.M. Verschuren

Center for Prevention and Health Services Research, National Institute for Public Health and the Environment, Bilthoven, the Netherlands

Presentation 3.1

Longitudinal trajectories of physical functioning in the doetinchem cohort study

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Background: The course of physical functioning varies between adults: limitations in physical functioning can be temporary or permanent, and the severity of limitations can decrease or increase over time. The aim of this study was to describe trajectories of physical functioning among a middle-aged cohort of men and women, followed over a period of 15 years in the Netherlands.

Methods: The study sample consisted of 4,123 participants (initial ages 26–70 years) from the Doetinchem Cohort Study, who participated at three or four measurements between 1995 and 2013. Physical functioning was measured with the Dutch RAND-36 questionnaire. Using a group-based modelling strategy, 15-year trajectories of physical functioning were determined. Multivariable linear regression analyses were performed to identify baseline characteristics associated with the trajectories.

Results: Preliminary analyses showed five distinct physical functioning trajectories, which were labelled as stable not limited (27%), stable slightly limited (54%), slightly limited-gradual deterioration (7%), moderately limited-gradual improvement (9%), stable severely limited (3%). These five trajectories differed regarding most socio-demographic, lifestyle and health characteristics at baseline. For instance, being female, older and low-educated, living without a partner, smoking, drinking no alcohol, being overweight or obese, and being physically inactive increased the probability for the “stable severely limited” course of physical functioning.

Conclusion: The long-term course of physical functioning in a middle-aged cohort is heterogeneous. Most individuals followed a stable but slightly limited level of physical functioning, over the 15- year period.

Presentation 3.2

Long-term trajectories in respiratory function – the doetinchem cohort study

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Background: Respiratory function declines with age, but the long-term course is not the same for everybody. Insight into long-term trajectories in adults may help to identify those at increased risk of respiratory dysfunction. Our objective was to describe age-dependent trajectories of respiratory function in a population-based cohort and determine the influence of sociodemographic and lifestyle characteristics.

Methods: Men and women from the Doetinchem Cohort Study, aged 20–59 years at inclusion, were examined every 5 years during 1987–2012. Spirometry was performed from 1994 onwards, with four repeated measures of forced expiratory volume in 1 s (FEV1) available. Trajectories of FEV1 as a function of age were classified using a group-based modelling strategy, adjusted for height squared ($N = 3{,}829$). Multivariable linear regression analyses of the group probabilities were used to evaluate baseline sociodemographic and lifestyle determinants of the trajectories.

Results: Preliminary analyses showed that initial FEV1 level discriminates better than decline in FEV1 for classifying 15-year trajectories. Four trajectory classes were distinguished, according to initial FEV1 and rate of decline: high-moderate (13.2%), medium-moderate (38.6%), low-moderate (37.6%), and very low-strong (10.6%). Mean decline in this last group was −0.57 l over 15 years, which was significantly more than in the other trajectories ($p < 0.001$). This most unfavorable trajectory was

more common among women and baseline smokers, and less common among highly educated.

Conclusion: Variation in the course of long-term respiratory function in an adult-population is mostly determined by initial level of FEV1. However, individuals with the lowest FEV1 also showed the largest decline.

Presentation 3.3

Life course development of biochemical markers: the Doetinchem Cohort Study

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Background: It has been suggested that several biochemical markers of kidney function, liver function or function of the immune system can also be used as biomarkers of ageing. In cross-sectional studies these biochemical markers have been found to decrease or increase with age. However, there is a paucity of longitudinal studies with repeated measurements in the same individual. Therefore, we explored the life course changes of several biochemical markers in adults between 25 and 65 years of age over a 20 year period.

Methods: Data of the longitudinal Doetinchem Cohort Study, which started in 1987–1991, were used. Biochemical data from the 2nd–5th examination rounds were available and the 2nd round served as baseline for these analyses. The analyses included 3,025 participants with complete data on the biochemical markers of kidney function, liver function, and chronic low grade inflammation. Analyses were stratified by sex and generation i.e. 10-year age group (26–36, 36–46, 46–56, and 56–66 years) at baseline.

Results: The levels of the biochemical markers differed between men and women, although the development with age followed a similar pattern in both sexes. Most markers of kidney function increased with progressing age, except for albumin, alanine aminotransferase, and gamma-glutamyl transpeptidase in men. No difference in the (geometric) mean of biomarkers were observed between generations when they attained a similar age.

Conclusion: This longitudinal study showed that biochemical markers of kidney function and chronic inflammation increase with increasing age. This is the first step in the identification of such markers suitable to distinguish between disease processes and underlying 'true ageing'.

Presentation 3.4

10-year changes in dietary intake of middle-aged men and women. The Doetinchem cohort study

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Background: Food and nutrient intake may change with increasing age, but existing longitudinal studies show conflicting results. In addition, none of these studies reported on possible determinants of changes, such as widowhood, retirement or disease.

Methods: We investigated 10-year changes in the consumption of food groups and nutrients in 2029 participants in the Doetinchem cohort study, aged 46–66 years at baseline. Usual dietary intake was estimated with a 178-item validated semi-quantitative food frequency questionnaire. Sex, age group, retirement, becoming a widow/widower and development of

diseases were considered as possible determinants of changes.

Results: In 10 years, energy intake decreased both in men (−866 ± 2,052 KJ/day, $p < 0.0001$) and women (−360 ± 1,548 KJ/day, $p < 0.0001$). For the majority of food groups intake decreased, but intake of poultry, fish and shellfish, non-alcoholic beverages and fruit (in women only) increased. This resulted in a somewhat healthier dietary pattern, with an increased percentage of energy coming from e.g. fish, vegetables, fruits, nuts, seeds and soy products and a decreased percentage of energy coming from e.g. French fries, (red) meat and meat products, and fats and oils. The favorable changes were most apparent for participants who acquired a myocardial infarction, stroke or diabetes during the 10-year follow-up. Changes were less favorable for participants who retired, became a widow(er) or disabled.

Conclusion: Our findings showed a generally favorable change in food consumption with ageing in middle-aged and older Dutch adults that are influenced by several life events, such as disease, retirement and widowhood.

Presentation 3.5

Life course changes in cognitive functioning – effects of genetics and cardiovascular risk factors.

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National Institute for Public Health and the Environment, Bilthoven, the Netherlands

Background: Cognitive functioning declines with ageing, but the rate and extent of decline is not the same for all persons.

Methods: Genetic predisposition and cardiovascular risk factors are studied in relation to 10-year cognitive decline in almost 3000 CVA-free men and women of the Doetinchem Cohort Study, aged 43–70 years at baseline. Cognitive functioning was assessed 3 times: at baseline, and at 5 and 10 years of follow-up using a cognitive test battery. A global cognitive score and three cognitive domain scores (memory, speed, and flexibility) were calculated. Associations between genes and cardiovascular risk factors and (changes in) cognitive functioning were analysed using random intercept models.

Results: Cognitive function declined exponentially with ageing. Persons with APOE E3/E4 or APOE E4/E4 declined more rapidly in global cognitive function and especially memory function than persons with APOE E3/E3. Incidence of diabetes was associated with accelerated global cognitive decline and memory decline. Larger waist circumference was associated with worse cognitive functioning and faster decline in global cognitive function and speed of cognitive processes, higher systolic blood pressure with worse cognitive functioning, higher HDL cholesterol with better cognitive functioning, and smoking with worse cognitive functioning and faster decline in speed of cognitive processes.

Conclusions: Genetics and cardiovascular risk factors are associated with cognitive ageing. A healthy lifestyle and prevention of cardiovascular risk factors may diminish the rate of cognitive decline with ageing and thereby keep up cognitive reserve at old age.

Symposium 4

Enhancing activity in community-living older people and nursing home residents: Five new approaches

Chairs: G.A.R. Zijlstra & G.I.J.M. Kempen

Maastricht University, CAPHRI School for Public Health and Primary Care, Department of Health Services Research, Maastricht, The Netherlands

Presentation 4.1

Reducing concerns about falls and improving activity in older people: Promising components in a multicomponent cognitive-behavioral program

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Background: The Dutch cognitive-behavioral group program “A Matter of Balance” (AMB-NL) showed effective in reducing concerns about falls and improving activity in community-dwelling older people. AMB-NL is a complex, multicomponent program and proof is needed regarding the effectiveness of individual behavior change components in order to understand the working mechanisms of such programs and to further improve their effectiveness. The objective of this study is to identify the least and most promising components within AMB-NL.

Methods: After the identification of 27 behavior change components within AMB-NL, an online two-round Delphi survey among 16 international experts was conducted to reach consensus on the least and most promising components. The level of consensus and importance of components were determined within the Delphi procedure.

Results: In total 23 of the 27 (>85%) components identified reached consensus. No consensus was gained for the components commitment, feedback on behavior, social support (unspecified) and restructuring the physical environment. According to the experts the most promising components were goal setting (behavior), graded tasks and behavioral practice/rehearsal. Information about health consequences, salience of consequences and information about emotional consequences were considered least promising.

Conclusion: These outcomes provide a first step in the evidence building process regarding the effectiveness of components in a complex intervention aimed at managing concerns about falls and improving activity in older people.

Presentation 4.2

A cognitive behavioral in-home program reduces fear of falling and related activity avoidance: Outcomes of an RCT

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Background: Fear of falling is frequently present among older people living in the community and has several adverse consequences. A cognitive-behavioral group intervention to reduce fear of falling and related avoidance behavior previously showed positive results. To reach frail older people who are not able or willing to attend a group program, a cognitive behavioral in-home intervention to reduce fear of falling and associated activity restriction was developed. This paper reports on the evaluation of this intervention in a randomized controlled trial in the Netherlands.

Methods: Community-living people aged 70 years or older who reported at least some fear of falling, associated activity restriction and fair/poor perceived health were eligible. Participants ($N = 389$) were randomly allocated to either intervention or control group. The intervention comprised 3 home visits and 4 telephone consultations during a 5 months period. The control group received no intervention. Data was collected at baseline and at 5 and 12 months. Primary outcomes were concerns about falls, avoidance of activity, restrictions in (instrumental) activities of daily living and falls.

Results: Concerns about falls, avoidance of activity and restrictions in (instrumental) activities of daily living were significantly reduced until 12 months of follow-up. In contrast to outdoor falls, the number of indoor falls was also significantly lower in the intervention group compared to the control group.

Conclusion: We recommend to implement this in-home intervention along the group approach that was already implemented national-wide in the Netherlands (Zijlstra et al; Gerontologist 2013; 53: 839–49) and several states in the US.

Presentation 4.3

Towards improved activities of daily living in nursing home residents: Identifying barriers to delivering evidence based care by nurses and nurses' aides

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Background : Nursing home residents generally have a low level of physical activity and a low functional status. It is therefore important to encourage them to perform (instrumental) activities of daily living ((I)ADL) independently as much as possible. However, this does not always happen. We developed and initially tested a questionnaire for 1) nurses' use of evidence based care (EBC) related to functional status of nursing home residents, and 2) their perceived barriers to this care.

Methods: Based on 14 interviews, 3 focus group interviews with residents and staff members of nursing homes, a literature study and expert consultation a questionnaire was developed. Main topics were: degree of support during (I)ADL, and related barriers. Barriers were divided into barriers related the resident and the resident's family, the nursing professionals, the social environment, and the organizational and economic environment.

Results: The questionnaire was completed by 37 nurses. Results indicate that IADL was less encouraged by nursing professionals compared to ADL. The 3 most frequently mentioned barriers were residents' fear to walk (86.5%), attention seeking through care (73.0%), and residents' unwillingness to perform activities (64.9%). Of the top 10 perceived barriers, 4 barriers were related to the resident and his family while only 1 was related to the nursing professionals.

Conclusion: This study indicates that nurses could encourage residents more to perform IADL activities. In addition, according to the nursing professionals the main barriers to EBC related to functional status are on resident level.

Presentation 4.4

An exercise garden: A promising intervention to stimulate physical activity in nursing homes

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Background: Exercise gardens are considered best practice for encouraging nursing home residents to become more physically active. An exercise garden is an outdoor facility comprising a supportive, elder friendly physical environment. The equipment present is selected to ensure high levels of accessibility, ease of use and enjoyment. However, information to which extent such a garden is used in daily nursing home practice is lacking. The aim of the current study was to asses 1) to what extent the exercise garden is actually visited by nursing home residents; 2) to what extent residents were supervised during their visits, and 3) what equipment is used.

Methods: In an exploratory study, behavioral mapping was used to assess the actual use of an exercise garden among 99 psychogeriatric nursing home residents. The garden was developed and located in a nursing home in the South of the Netherlands. Using a place-centered map, behavior of all residents within the garden was documented during 1 week.

Results: Our findings show that 63% of the residents visited the garden at least once a week. In 40% of the cases, residents visited the garden without supervision. If a supervisor was present, this mainly were physical or recreational therapists. Family and nursing staff were very little involved. Parallel bars, a basketball play, and lower body ergometers were the most used

equipment.

Conclusion: In conclusion, the garden is actually used by a majority of the residents present. However, the existing potential to engage residents in physical activity can be better utilized.

Presentation 4.5

Creating a tailored physical activity plan for nursing home residents using the 'MIBBO'

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Background: Inactivity is highly prevalent among nursing home residents. However, all sorts of daily activities have a 'natural' activity component (e.g. setting the table for a meal). A method (called "MIBBO") to investigate residents' preferences with regard to these daily physical activities has been developed.

Methods: In an iterative process an interdisciplinary team developed the method. In a sample of residents with different pathologies ($n = 123$) feasibility was assessed and data was collect on most often chosen activities and to investigate whether preferences stayed stable over time (test- retest).

Results: The main part of the MIBBO is a photo interview; residents assess and sort photos of 30 physical activities into two piles ('yes, I like to do' versus 'no, I'm not interested') and subsequently select their top five activities. The method takes on average 30 min to conduct and was assessed feasible within a small sample. The overall top 5 of frequently chosen activities were: gymnastics and orchestra (each 28%), preparing a meal (31%), walking (outside, 33%), watering plants (38%) and feeding pets (40%). During the retest, 69.4% of the initially selected top 5 were selected again.

Conclusion: The MIBBO can help health care professionals in tailoring physical activities to the preferences of their residents. A logical next step would be to focus on the implementation of the tailored activity plan into daily routine in nursing home care and to assess the effects of this implementation on the residents' level of physical activity.

Symposium 5

Personal meaning in later life: Philosophical foundations, empirical research and interventions

Chair: G.J. Westerhof

University of Twente, the Netherlands

Presentation 5.1

Meaning in life and aging well

Peter Derkx

University for Humansitic Studies, Utrecht, the Netherlands

Since the 1960s gerontology has seen different theories about ageing well, successful ageing, healthy ageing, positive ageing, optimal ageing etc. in which different central concepts were developed: activity, disengagement, health, wisdom, resilience etc. In this presentation the focus will be on ageing well as ageing meaningfully. First the concept of a meaningful life will be clarified (using theories by V. Frankl, R. Baumeister, A. Antonovsky, A. Smaling & H. Alma and J. Morgan & T. Farsides) in opposition to the concept of a life with subjective well-being (E. Diener) or psychological well-being (C. D. Ryff). It will become

clear that the dimension of moral worth or ethical justification represents the main difference between meaningfulness and well-being. Some reflections will be given about why this moral or ethical dimension is not a popular topic in empirical research on ageing well. Also some ideas will be presented about ways in which this ethical dimension might be incorporated in research. A final part of the presentation is dedicated to the implications of the idea that the ethical dimension is so important. The debate about Lars Tornstam's 'gerotranscendence' theory will be developed as an example to show what is involved.

Presentation 5.2

Ego integrity and well-being in the second half of life

G.J. Westerhof & E.T. Bohlmeijer

University of Twente, Department of Psychology, Health, and Technology, Enschede, the Netherlands

Background: Ego integrity, i.e., the acceptance of one's one and only life cycle, is an important aspect of personal meaning in later life. Most studies on ego integrity have been carried out in the Eriksonian tradition. The present study addresses ego integrity and despair from contemporary theories of personality and mental health to bring it closer to modern psychology. We used McAdams' three-level model of personality and Keyes' two-continua model of mental health and illness to develop hypotheses about the relations of ego integrity and despair to personality traits and mental health and illness.

Methods: The hypotheses were assessed in a cross-sectional study of Dutch adults in their second half of life (50–95 years; $N = 218$). Participants filled out the Northwestern Ego Integrity Scale, the Five Factor Personality Index, the Mental Health Continuum – Short Form, and the brief Center for Epidemiological Studies – Depression scale.

Results: Ego integrity was unrelated to personality traits, but it was associated with positive mental health, i.e., emotional, psychological, and social well-being. Despair was related to personality traits and depressive symptoms.

Conclusion: It is concluded that ego integrity and despair should be studied as a duality rather than as poles of one dimension. Furthermore, despair might result more from a general disposition of neuroticism, whereas ego integrity addresses an outcome of meaning giving processes that is important throughout the second half of life.

Presentation 5.3

How do participants experience online life-review with peer contact? A qualitative study.

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Background: Several studies show that face-to-face life-review is positively evaluated by participants and effective in decreasing depression and increasing meaning in life. The present study focuses on life-review for adults (40+) with moderate depressive symptomatology in a new mode of delivery as an online intervention with peer contact. The study aims to evaluate the online intervention from the participants' perspectives.

Methods: Participants individually followed six online life-review lessons, sharing their experiences online within their peer group of four randomly selected adults. To explore the participants experiences with online life-review with peer contact, semi-structured interviews ($N = 17$) were conducted by telephone. The interview scheme mainly included questions on the experience of the online elements of the intervention and the contact with peers during the intervention.

Results: In general, the participants were positive about the online mode of delivery of the life-review intervention. For example, the possibility to follow the intervention at any time or place were mentioned as pleasant elements of the intervention. The experiences with the peer contact were mixed, including both positive and negative experiences. Important topics were the atmosphere in the group, the communication within the group, the composition of the group members, and

the role of the group moderator.

Conclusion: An online mode of delivery seems suitable for a life-review intervention, as reflected by the positive participants' experiences with online aspects of the intervention. Although the peer contact was evaluated as positive by some participants, adaptions are necessary to stimulate a positive and constructive atmosphere and communication within the peer groups.

Symposium 6

Conditions for optimal collaboration between formal and informal caregivers of home-dwelling older adults: the impact of the individual caregiver, the care network and the care organization

Chair: M. Broese van Groenou

VU University, Department of Sociology, Amsterdam, the Netherlands

Presentation 6.1

Perspectives of caregivers and non-caregivers on the options to increase informal care

A. de Boer & M. de Klerk

National Institute of Social Research, The Hague, the Netherlands

The growing number of older people in the Netherlands raises concerns about the affordability of providing long term care. The working population is shrinking and demand for care is growing. Therefore, the government looks into the possibilities to increase the volume and intensity of informal care. Cuts in the long term care budget reinforces the need to provide more informal care. The opportunities and limits to mobilize more informal care is an ongoing discussion in the Netherlands. To learn more about the perspectives of caregivers and non-caregivers on this issue, a qualitative research was set up with four groups of informal caregivers, four groups of volunteers in care, four groups of 'non-actives' and four groups of care professionals. The caregivers all provide help to people with health problems or disabilities, up to and including care recipients in the terminal phase of life. The research was carried out in spring 2014 in different parts of the Netherlands. In each group eight participants were present, so qualitative data is present for a total of 128 respondents. The aim of this study is to give insight in the options perceived by these groups to generate more informal care. Are those already giving help willing to increase their activities and if so, what can be done to support them? How can the non-active people be mobilized? And what is the opinion of professionals? Are they willing to cooperate and what can they do?

Presentation 6.2

When do formal and informal caregivers of frail community-dwelling older adults discuss the care with each other?

M. Jacobs, D. Deeg, P. Groenewegen, & M. Broese van Groenou

VU University, Dept. of Sociology, Amsterdam, the Netherlands

Reform in long term care requires cooperation between formal care and informal home care. Using data on mixed care networks of 63 frail community-dwelling older adults, we examined if formal and informal caregivers discussed the care and whether this was related to characteristics of the older adult, the care network and the individual caregivers. The care recipients were mostly women, with an average age of 83 years old, and 70% was living alone. The majority of the sample was physically frail and about one-third reported memory problems. The care networks were on average composed of about ten caregivers, of whom seven were formal caregivers. For 112 formal-informal dyads information was present from both types of caregivers. Results show that in only half of 112 formal-informal dyads the care was discussed. Bivariate analyses reveal that discussion of care largely depended on residency, intensity of care provision and motivation of the informal caregiver. Whether formal caregivers regarded informal caregivers as co-workers or co-clients did not affect the discussion of care. Care recipients' poor health and lack of control in care did increase the likelihood of discussion of care between caregivers.

Discussion focuses on the fact that contact between non-resident informal caregivers and formal caregivers is not self-evident and requires more effort to be established.

Presentation 6.3

Substitution of professional care by informal care: myth or must? A Dutch home care organisation in transition.

M.G.H. Dautzenberg, E. Curfs & L. Donkers

Dautzenberg Research & Advice

In the context of Goudsbloem, an approach aiming at integrated primary care for community-dwelling frail elderly in Mid-Holland, practice-based research showed that elderly care recipients depended heavily on home care professionals (Dautzenberg et al. 2013). An in-depth analysis of 21 care networks of frail older care recipients illustrated that professional home care workers had become 'substitute daughters', providing not only physical care but also social support. Moreover, workers were unaware of nearby community services for frail elderly and the availability of volunteers.

Subsequently, an intervention program was set up by the home care organization that took part in Goudsbloem. The aim was to (1) reduce dependency on professional care by strengthening self-reliance and self-care of care recipients and (2) substitute professional care by informal care (family and volunteers). The intervention consisted of a transformed intake procedure for new clients, a training program for workers and supervision by team coaches.

An effect and process evaluation after 9 months showed that the average hours of personal care and nursing care had been reduced together with costs of care. The process evaluation showed that consistent organizational policy, strong support by the management and efforts made by the team coaches were success factors. However, workers did not succeed in involving more informal caregivers nor volunteers because they felt not capable of doing so. Collaboration with community services increased but remained limited. The conclusion was that Goudsbloem facilitated the integration of primary care services for frail elderly but still has a (long) way to go.

Symposium 7

Technology intensifies and enriches the environment of the elderly of 85+

Chair: E. van der Veerdonk

Care Domein Expert

Presentation 7.1

Robot Rose

K. van Hee

Robot Rose BV.

Background: Robot Rose is a service robot designed to perform activities of daily living. At a distance the robot is controlled by a human being. This means that the robot is remote controlled. Rose may carry out a variety of activities. Typical examples are the opening of a door, the pick up of a newspaper, the retrieval of a walking stick, the pick up of a plate and the cleaning of the table. Rose can perform a number of tasks autonomously, after receiving a command of the operator. The autonomy of the robot is limited to a few minutes.

Methods: the progress of the robot performance is based on the results of a variety of experiments. Testing is done in two pilot projects, one in the elderly care and the other in the physically disabled care. (1) Robot Rose itself is tested to perceive if it performs according the expectations; (2)An instrument is developed and tested, focusing on quality improvement and value addition for the client and his family.

Results: With Rose we promote the independency of seniors, because they can continue to care for themselves. This means an independent and enjoyable way of living.

Conclusion: To achieve better results we need to add digital and mechanical tools to the repertoire of Rose.

Presentation 7.2

Measuring Robot Rose

E. van der Veerdonk

Care Domain Expert

Background: Until now technology is hardly applied in the care sector. This study is directed to potential implementation of technology in the primary process of the care sector. The research in general is focused on three subjects: The implementation model, labor-saving technology and robotizing. During the research, a number of people mentioned that they felt sorry for the seniors who would need a robot in the future. However, this was not the opinion of the elderly themselves. In order to study these contradicting opinions, we developed a measure instrument that focuses on the quality improvement and added value of robots for the client and his family.

Method: We tested the measurement instrument in two pilot projects. The instrument is measuring 4 values: Own directory; Adequate physical exercise; Social contact; Personal surveillance of the client.

Result: The measurement instrument is adequate and ready to be tested.

Conclusion: Robot Rose improves the quality of elderly's life since Rose is always nearby and carries out what the senior demands.

Presentation 7.3

Intensifying the environment by music, pictures and fragrances

M. Hartveldt

National Expert Team Safety Perception

People over 85 years have trouble to experience their environment as a safe and pleasure one. Their senses, brain, and body function less well and can not always adapt to the environment. In contrast to previous adjustments with spectacles, hearing aids, rollators etc., now the environment needs to adapt to older persons. Intensifying the surroundings with brighter and better suited light; sound effects and music in a room with comfortable acoustic characteristics; nice scents that are noticed; visualizing familiar images with a slow pace video or life-size photos; suitable furniture inside and gardens outside that invite occupants to move around inside and outside. Each aspect of the environment (domestic and public) must be of high standards and must be professionally applied. Only then will the environment be more than the sum of its parts. Total multi-media experience by including acoustics, music, images and odour is explained in this session and elaborated from extensive experience with different applications that are applied in surroundings like hospital care and public places. Well-designed environments will suit the needs of occupants, resulting in a social and caring behaviour. Enhancing our life for a more pleasant stay can be achieved with the proper tools.

Poster

An increasing trend in hospitalization is related to the changing health of Dutch older adults

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Background: Improved health care over the past decades has resulted in an increased life expectancy. It has been suggested that the increasing rate of hospital admissions is reflective of this development. However, trends in hospital admissions have not been examined in relation to trends in health status, which leaves open the possibility that an increase in hospital admissions is a consequence of declining health trends. Another development is the decreasing trend in hospital length of stay (HLOS), presumably unrelated to patients' health status. The current study examines associations between the health status, hospitalization and HLOS of older adults between 1995 and 2009.

Methods: Data from the nationally representative Longitudinal Aging Study Amsterdam were linked to data from the Dutch Hospital Discharge Register. A total of 5,681 observations of 2,520 respondents (ages 65–88 years) across four waves (14 years) were studied. Psychosocial, lifestyle and health status factors were included in multivariate GEE models to assess their contribution to time trends in hospitalization and HLOS.

Results: Between 1995 and 2009 most health factors, including the number of chronic conditions, functional limitations, medication use, depressive symptoms and self-rated health, showed a worsening trend. Also, higher proportions reported having had contact with a medical specialist. These trends were partly responsible for increases in overnight and acute admissions. In addition, a more than doubled risk of day admissions over time was observed. This trend was not related to changes in health or psychosocial characteristics. As expected, HLOS per admission decreased, but no trends in health, psychosocial or lifestyle characteristics were observed that could explain this trend.

Conclusions: The worsening health profile of older patients could partly explain an increase in hospital admissions over time. Studies are needed that assess the impact of decreasing HLOS on future hospitalized older patients who will be in poorer health.

Auteurs

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