*Active Ageing and Healthy Living*
*G. Riva et al. (Eds.)*

*doi:10.3233/978-1-61499-425-1-122*

# The Role of Psychogeriatrics in Healthy Living and Active Ageing

Enrico MOLINARI[a,b], Chiara SPATOLA[a,b], Giada PIETRABISSA[a,b], Francesco PAGNINI [a], Gianluca CASTELNUOVO[a,b1]
[a] *Department of Psychology, Università Cattolica del Sacro Cuore, Milan, Italy*
[b] *Psychology Research Laboratory, IRCCS Istituto Auxologico Italiano, Italy*

**Abstract.** A healthy and active life is a key issue for elderly citizens, above all when psychological complications such as depression and anxiety disorders, late delusion or loneliness can be observed. Moreover, medical pathologies in elderly patients often have a multi-factorial etiology and many psychopathological dimensions and psychosocial risk factors are underestimated. From the perspective of clinical health psychology, psychogeriatrics could play an important role in promoting active ageing and a healthy lifestyle in elderly persons through tailored clinical approaches based on specific research and advanced professional training in this area. More research is needed in order to study which determinants affect the process of an active and functional ageing. Possible research ageing areas are: 1) evaluation of psychosocial risk-protective factors related to the individual's biography and personality. 2) Evaluation of enrichment programs and clinical protocols focused on the management of different topics such as health system areas, behavioral areas, social and physical environment areas, psychological factors and economic determinants. The goal of Psychogeriatrics endeavors to develop and evaluate interventions designed to stimulate improvement in friendship, self-esteem and subjective well-being, as well as to reduce loneliness among older citizens. 3) Evaluation of self-management programs in chronic disease conditions (such as obesity, diabetes, hypertension, poor nutrition, physical inactivity, alcohol abuse and tobacco smoking), that could enhance risk factors for health in elderly citizens. Typical key elements of self-management, such as decision making, problem solving, motivation, self-efficacy, resource utilization, and citizen's empowerment have to be studied.

**Keywords.** Psychogeriatrics, Health Psychology, Clinical Psychology, Active Ageing, Healthy Living, Self-management Programs

## Introduction

Around 10% of the worldwide population is above 60 years of age and this proportion is expected to significantly increase by 2050. In the European Union this trend is changing the demographic features and progressively moving towards an ageing population: 17.4% of around 87 million people was aged 65 or over in 2010 and in Europe the age group of 80 and over is increasing more rapidly than in non-European countries [1]. 2012 has been proclaimed as the *European year for active ageing and solidarity between generations* [2].

[1] Corresponding Author: Department of Psychology, Università Cattolica del Sacro Cuore, Largo Gemelli 1, 20123, Milan, Italy. E-mail: gianluca.castelnuovo@unicatt.it

Clinical health psychology, and particularly psychogeriatrics, plays an important role promoting healthy ageing in the lives of older adults [3]. Healthy and active living is an important value for elderly citizens. Depression and anxiety disorders, late delusion and loneliness are often observed psychological problems. Moreover, many psychopathological dimensions and psychosocial risk factors, traditionally underestimated, could contribute to a multi-factorial etiology of several medical pathologies in elderly patients.

Psychological research could shed light on which determinants affect the process of an active and functional ageing. Future research ageing areas are indicated below.

**Evaluation of psychosocial risk-protective factors related to the individual's biography and personality**. Typically protective factors are higher education, regular physical exercise, a healthy balanced diet, cognitively and intellectually challenging leisure activities and an active lifestyle with integrated social components. It is also important to evaluate personal independence, productivity and debilitation in relation to quality of life. Variables such as gender and culture have to be considered.

**Evaluation of enrichment programs and clinical protocols focused on the management of different topics such as health system areas** (health promotion and disease prevention, long-term care, mental health treatments, chronic care models, etc.), **behavioral areas** (physical activity, nutritional profiles, alcohol and tobacco use, etc.), **social and physical environment areas** (loneliness, role of caregivers, social support, logistic barriers, etc.), **psychological factors and economic determinants** (work, retirement, social protection). Psychogeriatrics endeavors to develop and evaluate interventions designed to stimulate improvement in friendship, self-esteem and subjective well-being, as well as to reduce loneliness among older citizens.

**Evaluation of self-management programs in chronic disease conditions** (such as obesity diabetes, hypertension, poor nutrition, physical inactivity, alcohol abuse and tobacco smoking), that could enhance risk factors for health in elderly citizens. Typical key elements of self-management, such as decision making, problem solving, motivation, self-efficacy, resource utilization, and citizen's empowerment have to be studied.

## 1. Definition and General Characteristics of Active Ageing

A typical definition of active ageing was proposed by Rowe and Kahn [4] using the term "successful ageing":

> "We define successful ageing as including three main components: low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life." (p. 433).

"Successful ageing" refers to situations where elderly people do not have (acute and chronic) diseases, do not suffer from disability and are cognitively capable, possess good physical fitness and actively use these capacities to have a functional integration with other persons in their society. Other terms have been used in psychogeriatric research such as healthy ageing, productive ageing, ageing well, optimal ageing and active ageing [2]. The main characteristics of ageing processes are life course perspective, heterogeneity, plasticity, contextuality, and social change [2].

**The process of ageing is part of the life course**. Even though negative and traumatic events could happen in the elderly (e.g., the onset of dementia), childhood, adolescence and adulthood shape and influence the biographical trajectories that will affect the third and fourth phase of life. It is important to take into account that the distinction between "third age" and "fourth age" is somewhat arbitrary.

"In gerontology, the beginning of the "third age" is often defined as the transition into retirement and/ or the age of 65 years; the beginning of the "fourth age" is sometimes defined as the age of 85 years. While the majority of individuals in the "third age" have sufficiently good health to live independently in private households and participate actively in society, the prevalence of people who are frail, dependent and in need of care increases in the "fourth age"." (p. 2, [2]).

**Ageing processes are heterogeneous**. There are significant inter-individual differences among ageing persons due to the many variables during the life course: different life-styles could generate several trajectories producing cumulative inequality. The most important differences are related to health, physical features, cognitive abilities and social integration [2] .

**Ageing processes are characterized by plasticity**. Even if there are important genetic and biographical determinants in the ageing processes, psychogeriatrics has noted that there is no determinism towards a negative or falling scenario, but the course of ageing can be modified and improved by effective and adequate interventions, taking into account that efficiency of treatments decreases in very old age [2; 5; 6] .

**Ageing processes are evolving in a multilevel context**. Even if ageing processes happen within an individual dimension, factors about different levels (environmental, cultural, societal and familiar) have to be investigated. Interventions for successful ageing can be "tailored" with consideration for the best appropriate level [2; 7].

Finally, **Ageing is part of a changing social and cultural context**.

"The process of ageing takes place within historical time. As societal conditions change over time so does the process of ageing ... Not only the average life expectancy has changed (and the fact that more members of a birth cohort grow old), but also living circumstances like health care systems and social networks." (p. 3, [2]).

## 2. Psychosocial Risk-Protective Factors in Active Ageing.

Evaluation is necessary to assess psychosocial risk-protective factors in elderly patients related to the individual's history and personality. The potential risk role played by organic disorders (e.g., obesity, dyslipidemia, diabetes, etc.) is well known and considered, but avoiding psychopathologies and preserving cognitive function are key measures, not always appreciated, in elderly treatment and rehabilitation, to ensure independence, productivity and quality of life.

Moreover, the potential protective role of psychosocial factors (e.g., higher education, regular exercise, healthy diet, intellectually challenging leisure activities and active socially integrated lifestyle) is vital in active ageing. In order to promote well-being and to minimize disability by reducing risk and increasing factors, it is necessary to adopt strategies that protect health throughout the life course [8; 9].

There is a significant variability in the elderly population with respect to health, functioning and psychological status [10] due to the presence of different patterns or

"profiles of ageing" in several areas of functioning and health which influence successful or dysfunctional ageing processes [10]. In order to better understand the role of psychosocial factors in ageing profiles, an up-to-date and well done cluster analysis has been conducted:

"A cluster analysis produced three within-person psychosocial profiles characterized by distinct patterns of functioning: highly successful elders demonstrated to be healthy, highly confident in their own resources and very active in daily life; moderately successful elders demonstrated average functioning across domains, although they expected decreases in the future; and highly impaired elders were ill and stressed, at a high risk for future health problems and depression, and tried to compensate for their status mainly through social support." (p. 489, [10])

These results are novel and interesting because the authors found different psychosocial profiles in older adults, including several diverse psychosocial functioning domains such as current perceived health, physical health, mental health, absence of anxiety, daily functioning, absence of depression, general self-efficacy, social self-efficacy, optimism, social support from friends and relatives, leisure activities, desired leisure activities, monthly frequency of leisure activities, leisure satisfaction, major life stressors, average stress, average coping and total stress impact. Considering these variables, the psychosocial profiles identified by the cluster analysis fall into three categories: a first group is composed mainly of highly successful older adults; a second group is characterized by highly impaired elders; the third cluster is composed mainly of moderately successful elders (as reported in [10]). These results shed light towards a better understanding of the relationship between subjective well-being and psychosocial profiles, showing differing "ageing trajectories".

"The present study represents an attempt to move beyond the description of average ageing trajectories toward a person-centred, multidimensional, empirically defined consideration of differential ageing ... Our findings also add some insights on the well-being "paradox" in old age, which suggests that older persons maintain a sense of well-being in the face of increased risks, losses and declines [11-13]. Research on clustering elderly trajectories has demonstrated the heterogeneity and differential development which occurs in old age, with many of the elders showing "desirable" and positive health status, functioning and well-being. For many elders, ageing is not associated with negative outcomes, most likely due to the existence of powerful psychosocial resources for a positive and successful ageing process...; thus, the paradox may be true for some but not all elderly persons." (p. 500, [14]).

Clinical health psychology must focus on studying and improving the psychosocial resources available, taking into account the differences in each ageing profile. Specific and "tailored" psychogeriatric interventions are needed to increase the subjective well-being and quality of life in elderly people [14].

## 3. The Healthy Ageing Model: Promoting Behaviour Change in Elderly Persons

An interesting perspective about how to better support older adults in adopting healthy behaviours has been proposed by Potempa et al. [15]. According to these authors, it is well known that the health of older adults, especially those with chronic health conditions, is significantly dependent upon behavioral choices that have to be made

each day on a long-term basis. Such changes are not always easily accomplished due to lack of motivation and other barriers.

Older adults and their families and caregivers aim to ensure prevention of morbidity and improve quality of life in the later years. So more resources will be spent not only for physical health, but also for a wide concept of "quality of life", defined as

> "A general sense of happiness and satisfaction, meaningful activity, and the ability to express culture, beliefs, values and relationships." (p. 52,[15])

The Healthy Ageing Model was developed to create useful future guidelines for ageing research and practice, where the model of health promotion is mainly characterized by the support of positive behavioural changes. The most important and validated theoretical models of health behaviour change in a population of ageing individuals are implemented, considering varying states of health and illness,, In particular, a client-centered approach [16; 17] is used with motivational interviewing techniques [18-24] providing reflective listening to and solutions discussed with the patient, improving the personal sense of autonomy and working on the readiness state of clients in the change cycle [25-27]. The Healthy Ageing Model also focuses on goal setting, establishing targets according to each current patient's readiness and activity level, another important variable to consider when working with elderly patients [28-30]. Goals have to be credible, individualized and tailored for each patient in terms of time and space [31]. The Healthy Ageing Model is characterized by four elements: (1) a client-centered perspective, (2) a goal-driven approach, (3) an individualized "coaching" strategy of health behaviour change and (4) a Personal Health System, an approach that recognizes the importance of the broader health context that surrounds clients [15].

- *Client-centered perspective*
  The Healthy Ageing Model takes into account that the individual care needs are of vital importance, and health and illness experiences are very personal. To give continuous attention to the client's perspective and to their view of their support systems is fundamental. Clinical health psychology can train professionals to use an empathetic, manner at a communicative and relational level, listening to the client's story with a non-judgmental approach [15; 32-34].

- *Goal-driven approach*
  The Healthy Ageing Model focuses primarily on goal setting. Goals have to be articulated by the client; those which are individualized, specific, meaningful and achievable are the most effective.

  > "Goals may or may not be directly related to health, or at least health in this context is very broadly defined. It is another premise of the model that even modest progress toward a specific goal accesses clients' desire to engage further action toward other desired behaviour change. Confidence or self-efficacy is built specific behaviour by specific behaviour." (p.53, [15])

- *Health professionals' coaching*
  Due to the American context of the Potempa's contribution, the term behavioural coaching has to be adapted to the European traditions, where the "health coach" role could be played by a multiprofessional team: the mental health and behavior change

components could be performed by a clinical health psychologist or a psychologist with a deep experience in psychogeriatric topics. This "behavioral coach" has to clarify and enhance the health care goals discussed for the clients and coordinate with the clinical team to produce a behavioral change if necessary [15; 35; 36].

One aspect of successful Healthy Ageing Model oriented counseling is a methodology called Motivational Interviewing (MI). MI could be defined as a directive and client-centered counseling technique for helping clients to understand and resolve ambivalence about behaviour change [37]. This therapeutic approach is currently widely used in health settings, such as cardiac rehabilitation [38-44], and is clearly described by Larsen and Zwisler:

> "Psychologists William R. Miller and Stephen Rollnick developed motivational interviewing (or counselling) in the 1990s. This is used in health promotion and disease prevention initiatives in which health personnel attempt to motivate people to change their behaviour based on the stages of change model. Motivational interviewing mainly targets people who are motivated to change behaviour (action and maintenance stages) ... The technique of motivational interviewing is a form of guidance that places patients in the centre. Instead of directing patients towards a predetermined goal, patient centred health communication starts with the situation and resources of patients. The practitioner and the patient jointly prepare a strategy that optimally promotes the patient's action competence. This ensures that patients can process the knowledge they encounter and make decisions on a qualified basis. The practitioner begins the interview by investigating what patients already know. Patients who need knowledge are offered further information. This information must be based on facts and exclude the practitioner's assessment. Patients are informed about the effects of various forms of health behaviour. Information presented orally may be supplemented by written material. The purpose of motivational interviewing is not necessarily to get patients to change their behaviour but more to tailor advice and guidance to each individual. The starting point is that the motivation for change arises from personal clarity and liberation from an ambivalent attitude towards change. Health personnel can help patients to achieve clarity and perhaps change by using a motivational interviewing technique in a nonjudgemental atmosphere." (p. 29-44, [45])

- *Personal Health System*

  Another important component of the Healthy Ageing Model is the Personal Health System, defined as a complex system of relationships, behaviors, treatments, interventions, clinical practices in general and beliefs that can help clients in moving toward their personal goals. Traditional medical services and other clinical and health supports available for patients are considered parts of the Personal Health System. It provides tools to clients in order to be engaged and active in health ageing processes [46-50].

  > "Family and social network engagement and the ongoing creation and acknowledgement of activities, people and resources the client relies on for assistance and support is well-documented as a key contributor to positive self-care and well being..." (p. 54, [15])

## 4. Psychogeriatric Interventions for Healthy Living in Clinical Settings

Mental health and mental wellbeing are concepts used across the life span, but some factors are especially relevant to older people's context. Typically the mental health of an older person is linked to a positive context of active ageing, with a dimension of

control over the health and lifestyle choices [51]. Relevant risk factors for mental illness in the ageing processes are the loss of social relationships and roles, negative changes in lifestyle, presence of chronic conditions and comorbidities, physiological and neurocognitive decline [1; 51]. Mental health promotion endeavors to ensure healthy ageing, enabling older people to remain active and independent, strengthening and maintaining the environmental, social, and individual factors that preserve mental health [1].

An important systematic review and meta-analysis [52] was conducted to evaluate the most successful psychosocial interventions for mental health promotion, with a particular focus on treating depression among older adults aged 65 years or over. Compared to no-intervention controls, the evaluated psychosocial interventions had a statistically significant pooled effect on depressive symptoms, but no statistically significant effects could be found for the other measured outcomes, such as cost-effectiveness and acceptability of the interventions, quality of life, etc. [1; 52]. The interventions studied in this systematic review and meta-analysis [52] could be categorized into the following six groups [1]:

- *Physical exercise.*
  Physical exercise interventions include aerobic, yoga, or tai chi classes, targeting general older populations, as well as specific physical activity training programs, targeting frail older adults, taking into account that the older age groups contain individuals who generally suffer from more physical limitations than younger older adults and therefore may benefit less from physical exercise interventions [1; 53; 54].

- *Skill training interventions.*
  This category contains different interventions aimed at working on educational components, cognitive skills and management strategies. Typical training involves memory programs, mindfulness exercises and learning sessions about the use of new technologies such as Internet [1; 55-57].

- *Reminiscence.*
  Reminiscence-based interventions include various forms of life reviewing and recalling past events. This act of remembering, telling or "re-writing" about past experiences could be very useful in older age [58-62].

- *Group support provided to people experiencing loneliness.*
  Social support was considered within this category and consisted of groups for older adults living alone and experiencing loneliness. Social support groups enhance social networks and contacts, reducing feelings of loneliness in older adults, especially for those with a high risk of social isolation [1; 63-65].

- *Social activities.*
  Social activity interventions aim to rebuild an active role for elderly participants. These activities have a significant positive impact on reducing depressive symptoms and improving mental health in general [1; 56; 66-68].

- *Multicomponent interventions.*
  Some interventions could be characterized by the presence of different components taken from the previous categories; this typology is considered as "multicomponent intervention" [1; 56; 69; 70].

## 5. Conclusions

Many elderly persons and patients need to be monitored, managed and treated from both medical and psychological points of view, particularly in cases with chronic disease conditions (such as obesity diabetes, hypertension, poor nutrition, physical inactivity, alcohol and tobacco abuse ), that could enhance risk factors for health in elderly citizens. Typical key elements of a traditional treatment or of a self-management approach, such as decision making, problem solving, motivation, self-efficacy, resource utilization, or citizen's empowerment, have to be studied and improved by clinical health psychology and psychogeriatrics [35; 36; 71].

Clinical interventions and social activities are effective in enhancing mental wellbeing in later life.

> "Based on the findings, meaningful social activities tailored to the older individual's abilities, preferences, and needs should be considered when aiming to promote mental health among older people. Duration of interventions should also be considered in practice, because longer interventions, lasting for longer than 3 months, exhibited positive effects on mental wellbeing and depressive symptoms. These findings should be taken into account and applied in the design and replication of interventions with evidenced positive effects. The heterogeneity within the older population should not only be considered in intervention planning and implementation, but also in the description of the study sample in research reports." (p.346, [1])

Further research is needed in psychogeriatric protocols to evaluate different clinical psychology-based program types, such as psychological interventions, psycho-educational programs, psychotherapies, educational training, counselling sessions and relaxation techniques [35; 36; 72-75]. As noted by Payman [76], many territories are awaiting for exploration and research. Theoretical frameworks, case studies, randomized controlled clinical trials, systematic reviews and meta-analysis, if possible, are necessary in the active ageing area in order to enhance the scientific and practical level of psychogeriatrics. Cognitive-behavioural therapy is the most validated approach in active ageing. Other psychotherapies, such as interpersonal psychotherapy and brief psychodynamic psychotherapy, are growing and need specific studies in the area of elderly research [76].

New approaches such as Acceptance and Commitment Therapy [77] or expressive writing [78], have to be tested for cases of multiple chronic disease conditions associated with elderly, There is a need to improve the study of rehabilitation programs on patients with well-known comorbidities such as obesity [71; 79], increasing the study of psychosocial and cognitive features related to medical complications [80-85], and opening the door to the growing opportunities provided by new technologies, mHealth approach and telepsychogeriatrics [86-92].

## References

[1] A.K. Forsman, E. Stengard, and K. Wahlbeck, Enhancing Mental Health and Mental Wellbeing in Older People. Important Concepts and Effective Psychosocial Interventions, in: *Interventions and Policies to Enhance Wellbeing: Wellbeing: A Complete Reference Guide, Volume VI,* F.A. Huppert and C.L. Cooper, eds., John Wiley & Sons, 2014.
[2] United Nations Economic Commission for Europe, Active ageing and quality of life in old age, in, New York and Geneva,, 2012.
[3] C. Stephens, M. Breheny, and J. Mansvelt, Healthy ageing from the perspective of older people: A capability approach to resilience, *Psychol Health* (2014), 1-17.
[4] J.W. Rowe and R.L. Kahn, Successful ageing, *Gerontologist* **37** (1997), 433-440.
[5] M. Yamada and T. Higuchi, Antidepressant-elicited changes in gene expression: remodeling of neuronal circuits as a new hypothesis for drug efficacy, *Prog Neuropsychopharmacol Biol Psychiatry* **29** (2005), 999-1009.
[6] T.J. Bakker, H.J. Duivenvoorden, J. van der Lee, M.G. Olde Rikkert, A.T. Beekman, and M.W. Ribbe, Benefit of an integrative psychotherapeutic nursing home program to reduce multiple psychiatric symptoms of psychogeriatric patients and caregiver burden after six months of follow-up: a re-analysis of a randomized controlled trial, *Int Psychogeriatr* **25** (2013), 34-46.
[7] E.R. Frenkel, E.S. Newman, and S.R. Sherman, Classification decisions within psychogeriatric day care, *Community Ment Health J* **19** (1983), 279-289.
[8] N.M. Peel, H.P. Bartlett, and R.J. McClure, Healthy ageing as an intervention to minimize injury from falls among older people, *Ann N Y Acad Sci* **1114** (2007), 162-169.
[9] A.K. Desai, G.T. Grossberg, and J.T. Chibnall, Healthy brain ageing: a road map, *Clin Geriatr Med* **26** (2010), 1-16.
[10] R.L. Moreno, D. Godoy-Izquierdo, M.L. Vazquez Perez, A.P. Garcia, F. Araque Serrano, and J.F. Godoy Garcia, Multidimensional psychosocial profiles in the elderly and happiness: a cluster-based identification, *Ageing Ment Health* **18** (2014), 489-503.
[11] E. Diener, E. Suh, R. Lucas, and H. Smith, Subjective well-being: Three decades of progress, *Psychological Bulletin* **125** (1999), 276-302.
[12] U. Kunzmann, T.D. Little, and J. Smith, Is age-related stability of subjective well-being a paradox? Cross-sectional and longitudinal evidence from the Berlin ageing study, *Psychol Ageing* **15** (2000), 511–526.
[13] O. Schilling, Development of life satisfaction in old age: Another view on the "paradox", *Social Indicators Research* **75** (2006), 241–271.
[14] D. Gerstorf, J. Smith, and P.B. Baltes, A systemic-wholistic approach to differential ageing: longitudinal findings from the Berlin Ageing Study, *Psychol Ageing* **21** (2006), 645-663.
[15] K.M. Potempa, S.W. Butterworth, M.K. Flaherty-Robb, and W.L. Gaynor, The Healthy Ageing Model: health behaviour change for older adults, *Collegian* **17** (2010), 51-55.
[16] R. Barton, The ageing musician, *Work* **22** (2004), 131-138.
[17] M. Finlayson, T.V. Denend, and E. Shevil, Multiple perspectives on the health service need, use, and variability among older adults with multiple sclerosis, *Occup Ther Health Care* **17** (2004), 5-25.
[18] W.R. Miller and S. Rollnick, The effectiveness and ineffectiveness of complex behavioral interventions: impact of treatment fidelity, *Contemp Clin Trials* **37** (2014), 234-241.
[19] W.R. Miller and S. Rollnick, Meeting in the middle: motivational interviewing and self-determination theory, *Int J Behav Nutr Phys Act* **9** (2012), 25.
[20] W.R. Miller and S. Rollnick, Ten things that motivational interviewing is not, *Behav Cogn Psychother* **37** (2009), 129-140.
[21] S. Rubak, A. Sandbaek, T. Lauritzen, and B. Christensen, Motivational interviewing: a systematic review and meta-analysis, *Br J Gen Pract* **55** (2005), 305-312.
[22] K.R. Lilienthal, A.E. Pignol, J.E. Holm, and N. Vogeltanz-Holm, Telephone-Based Motivational Interviewing to Promote Physical Activity and Stage of Change Progression in Older Adults, *J Ageing Phys Act* (2013).
[23] K.G. Sahlen, H. Johansson, L. Nystrom, and L. Lindholm, Health coaching to promote healthier lifestyle among older people at moderate risk for cardiovascular diseases, diabetes and depression: a study protocol for a randomized controlled trial in Sweden, *BMC Public Health* **13** (2013), 199.
[24] J.A. Bennett, N.A. Perrin, G. Hanson, D. Bennett, W. Gaynor, M. Flaherty-Robb, C. Joseph, S. Butterworth, and K. Potempa, Healthy ageing demonstration project: nurse coaching for behavior change in older adults, *Res Nurs Health* **28** (2005), 187-197.
[25] C.S. Lam, A.H. Wiley, A. Siu, and J. Emmett, Assessing readiness to work from a stages of change perspective: implications for return to work, *Work* **37** (2010), 321-329.
[26] M. Shirazi, A.A. Zeinaloo, S.V. Parikh, M. Sadeghi, A. Taghva, M. Arbabi, A.S. Kashani, F. Alaeddini, K. Lonka, and R. Wahlstrom, Effects on readiness to change of an educational intervention on depressive

disorders for general physicians in primary care based on a modified Prochaska model--a randomized controlled study, *Fam Pract* **25** (2008), 98-104.
[27] M. Shirazi, S.M. Assadi, M. Sadeghi, A.A. Zeinaloo, A.S. Kashani, M. Arbabi, F. Alaedini, K. Lonka, and R. Wahlstrom, Applying a modified Prochaska's model of readiness to change for general practitioners on depressive disorders in CME programmes: validation of tool, *J Eval Clin Pract* **13** (2007), 298-302.
[28] J.H. Hibbard, E.R. Mahoney, R. Stock, and M. Tusler, Do increases in patient activation result in improved self-management behaviors?, *Health Serv Res* **42** (2007), 1443-1463.
[29] J.H. Hibbard, E.R. Mahoney, J. Stockard, and M. Tusler, Development and testing of a short form of the patient activation measure, *Health Serv Res* **40** (2005), 1918-1930.
[30] J.H. Hibbard, J. Stockard, E.R. Mahoney, and M. Tusler, Development of the Patient Activation Measure (PAM): conceptualizing and measuring activation in patients and consumers, *Health Serv Res* **39** (2004), 1005-1026.
[31] J.O. Prochaska, Decision making in the transtheoretic model of behavior change, *Medical Decision Making* **28** (2008), 845-849.
[32] M.W. Kahn, Etiquette-based medicine, *N Engl J Med* **358** (2008), 1988-1989.
[33] G. Castelnuovo, 5 years after the Kahn's etiquette-based medicine: a brief checklist proposal for a functional second meeting with the patient, *Front Psychol* **4** (2013), 723.
[34] F. Pagnini, G.M. Manzoni, and G. Castelnuovo, Emotional intelligence training and evaluation in physicians, *JAMA* **301** (2009), 600; author reply 601.
[35] G. Castelnuovo, Empirically supported treatments in psychotherapy: towards an evidence-based or evidence-biased psychology in clinical settings?, *Front Psychol* **1** (2010), 27.
[36] G. Castelnuovo, No medicine without psychology: the key role of psychological contribution in clinical settings, *Front Psychol* **1** (2010), 4.
[37] W.R. Miller and S.S. Rollnick, *Motivational interviewing: Preparing people to change (2nd ed.)*, Guilford Press, New York, 2002.
[38] T.M. Beckie and J.W. Beckstead, The effects of a cardiac rehabilitation program tailored for women on their perceptions of health: a randomized clinical trial, *J Cardiopulm Rehabil Prev* **31** (2011), 25-34.
[39] A.J. Bellg, Maintenance of health behavior change in preventive cardiology. Internalization and self-regulation of new behaviors, *Behav Modif* **27** (2003), 103-131.
[40] S.J. Bredie, A.J. Fouwels, H. Wollersheim, and G.M. Schippers, Effectiveness of Nurse Based Motivational Interviewing for smoking cessation in high risk cardiovascular outpatients: a randomized trial, *Eur J Cardiovasc Nurs* **10** (2011), 174-179.
[41] L. Brennan, J. Walkley, S.F. Fraser, K. Greenway, and R. Wilks, Motivational interviewing and cognitive behaviour therapy in the treatment of adolescent overweight and obesity: study design and methodology, *Contemp Clin Trials* **29** (2008), 359-375.
[42] B. Everett, P.M. Davidson, N. Sheerin, Y. Salamonson, and M. DiGiacomo, Pragmatic insights into a nurse-delivered motivational interviewing intervention in the outpatient cardiac rehabilitation setting, *J Cardiopulm Rehabil Prev* **28** (2008), 61-64.
[43] N.H. Miller, Motivational interviewing as a prelude to coaching in healthcare settings, *J Cardiovasc Nurs* **25** (2010), 247-251.
[44] N.H. Miller, Adherence behavior in the prevention and treatment of cardiovascular disease, *J Cardiopulm Rehabil Prev* **32** (2012), 63-70.
[45] J. Larsen and A.D.O. Zwisler, Lifestyle Intervention, in: *Cardiac Rehabilitation: Rationale, methods and experience from Bispebjerg Hospital,* A.D.O. Zwisler, L. Schou, and L.V. Sørensen, eds., Cardiac Rehabilitation Unit, Department of Cardiology, H:S Bispebjerg Hospital, 2004.
[46] G. Graffigna, S. Barello, and G. Riva, How to make health information technology effective: the challenge of patient engagement, *Arch Phys Med Rehabil* **94** (2013), 2034-2035.
[47] G. Graffigna, S. Barello, B.K. Wiederhold, A.C. Bosio, and G. Riva, Positive technology as a driver for health engagement, *Stud Health Technol Inform* **191** (2013), 9-17.
[48] B.K. Wiederhold, G. Riva, and G. Graffigna, Ensuring the best care for our increasing ageing population: health engagement and positive technology can help patients achieve a more active role in future healthcare, *Cyberpsychol Behav Soc Netw* **16** (2013), 411-412.
[49] G. Graffigna, S. Barello, and G. Riva, Technologies for patient engagement, *Health Aff (Millwood)* **32** (2013), 1172.
[50] S. Barello, G. Graffigna, and E. Vegni, Patient engagement as an emerging challenge for healthcare services: mapping the literature, *Nurs Res Pract* **2012** (2012), 905934.
[51] M. Cattan and S. Tilford, eds., *Mental health promotion a lifespan approach. Maidenhead*, McGraw-Hill/Open University Press, U.K., 2006.
[52] A.K. Forsman, J. Nordmyr, and K. Wahlbeck, Psychosocial interventions for the promotion of mental health and the prevention of depression among older adults, *Health Promot Int* **26 Suppl 1** (2011), i85-107.

[53] N.J. Kirk-Sanchez and E.L. McGough, Physical exercise and cognitive performance in the elderly: current perspectives, *Clin Interv Ageing* **9** (2014), 51-62.
[54] M. Gine-Garriga, M. Roque-Figuls, L. Coll-Planas, M. Sitja-Rabert, and A. Salva, Physical exercise interventions for improving performance-based measures of physical function in community-dwelling, frail older adults: a systematic review and meta-analysis, *Arch Phys Med Rehabil* **95** (2014), 753-769 e753.
[55] M. Arbesman and L.J. Mosley, Systematic review of occupation- and activity-based health management and maintenance interventions for community-dwelling older adults, *Am J Occup Ther* **66** (2012), 277-283.
[56] A.K. Forsman, I. Schierenbeck, and K. Wahlbeck, Psychosocial interventions for the prevention of depression in older adults: systematic review and meta-analysis, *J Ageing Health* **23** (2011), 387-416.
[57] J. Tiivel, Increasing the effectiveness of your teaching program for the elderly: assessing the client's readiness to learn, *Perspectives* **21** (1997), 7-10.
[58] M. Pinquart and S. Forstmeier, Effects of reminiscence interventions on psychosocial outcomes: a meta-analysis, *Ageing Ment Health* **16** (2012), 541-558.
[59] J. Korte, E.T. Bohlmeijer, G.J. Westerhof, and A.M. Pot, Reminiscence and adaptation to critical life events in older adults with mild to moderate depressive symptoms, *Ageing Ment Health* **15** (2011), 638-646.
[60] K. de Medeiros, A. Mosby, K.B. Hanley, M.S. Pedraza, and J. Brandt, A randomized clinical trial of a writing workshop intervention to improve autobiographical memory and well-being in older adults, *Int J Geriatr Psychiatry* **26** (2011), 803-811.
[61] B. Woods, A. Spector, C. Jones, M. Orrell, and S. Davies, Reminiscence therapy for dementia, *Cochrane Database Syst Rev* (2005), CD001120.
[62] A. Spector, M. Orrell, S. Davies, and R.T. Woods, Reminiscence therapy for dementia, *Cochrane Database Syst Rev* (2000), CD001120.
[63] N.L. Stevens, [Ageing well in the 20th century: a psychosocial perspective], *Tijdschr Gerontol Geriatr* **44** (2013), 104-111.
[64] M. Kirkevold, W. Moyle, C. Wilkinson, J. Meyer, and S. Hauge, Facing the challenge of adapting to a life 'alone' in old age: the influence of losses, *J Adv Nurs* **69** (2013), 394-403.
[65] H. Litwin and S. Shiovitz-Ezra, Social network type and subjective well-being in a national sample of older Americans, *Gerontologist* **51** (2011), 379-388.
[66] J. Reichstadt, G. Sengupta, C.A. Depp, L.A. Palinkas, and D.V. Jeste, Older adults' perspectives on successful ageing: qualitative interviews, *Am J Geriatr Psychiatry* **18** (2010), 567-575.
[67] S.J. Bartels and S.I. Pratt, Psychosocial rehabilitation and quality of life for older adults with serious mental illness: recent findings and future research directions, *Curr Opin Psychiatry* **22** (2009), 381-385.
[68] A. Forster, R. Lambley, J. Hardy, J. Young, J. Smith, J. Green, and E. Burns, Rehabilitation for older people in long-term care, *Cochrane Database Syst Rev* (2009), CD004294.
[69] C.J. Bula, S. Monod, C. Hoskovec, and S. Rochat, Interventions aiming at balance confidence improvement in older adults: an updated review, *Gerontology* **57** (2011), 276-286.
[70] D. Gallagher-Thompson and D.W. Coon, Evidence-based psychological treatments for distress in family caregivers of older adults, *Psychol Ageing* **22** (2007), 37-51.
[71] G. Pietrabissa, G.M. Manzoni, S. Corti, N. Vegliante, E. Molinari, and G. Castelnuovo, Addressing motivation in globesity treatment: a new challenge for clinical psychology, *Front Psychol* **3** (2012), 317.
[72] J. Jordan, B. Bardé, and A.M. Zeiher, eds., *Contributions toward evidence-based psychocardiology: A systematic review of the literature.*, American Psychological Association, Washington, 2007.
[73] G.M. Manzoni, F. Pagnini, G. Castelnuovo, and E. Molinari, Relaxation training for anxiety: a ten-years systematic review with meta-analysis, *BMC Psychiatry* **8** (2008), 41.
[74] E.A. Dornelas, *Psychotherapy with Cardiac Patients: Behavioral Cardiology in Practice*, American Psychological Association, Washington, 2008.
[75] E.A. Dornelas, ed., *Stress Proof the Heart: Behavioral Interventions for Cardiac Patients*, Springer, New York, 2012.
[76] V. Payman, Psychotherapeutic treatments in late life, *Curr Opin Psychiatry* **24** (2011), 484-488.
[77] C.A. Spatola, G.M. Manzoni, G. Castelnuovo, G. Malfatto, M. Facchini, C.L. Goodwin, M. Baruffi, and E. Molinari, The ACTonHEART study: rationale and design of a randomized controlled clinical trial comparing a brief intervention based on Acceptance and Commitment Therapy to usual secondary prevention care of coronary heart disease, *Health Qual Life Outcomes* **12** (2014), 22.
[78] G.M. Manzoni, G. Castelnuovo, and E. Molinari, The WRITTEN-HEART study (expressive writing for heart healing): rationale and design of a randomized controlled clinical trial of expressive writing in coronary patients referred to residential cardiac rehabilitation, *Health Qual Life Outcomes* **9** (2011), 51.
[79] G.M. Manzoni, V. Villa, A. Compare, G. Castelnuovo, F. Nibbio, A.M. Titon, E. Molinari, and L.A. Gondoni, Short-term effects of a multi-disciplinary cardiac rehabilitation programme on psychological well-being, exercise capacity and weight in a sample of obese in-patients with coronary heart disease: a practice-level study, *Psychol Health Med* **16** (2011), 178-189.

[80] R. Proietti, G. Manzoni, L. Di Biase, G. Castelnuovo, L. Lombardi, C. Fundaro, N. Vegliante, G. Pietrabissa, P. Santangeli, R.A. Canby, A. Sagone, M. Viecca, and A. Natale, Closed loop stimulation is effective in improving heart rate and blood pressure response to mental stress: report of a single-chamber pacemaker study in patients with chronotropic incompetent atrial fibrillation, *Pacing Clin Electrophysiol* **35** (2012), 990-998.
[81] R. Proietti, G.M. Manzoni, L. Cravello, G. Castelnuovo, M.L. Bernier, and V. Essebag, Can Cardiac Resynchronization Therapy Improve Cognitive Function? A Systematic Review, *Pacing Clin Electrophysiol* (2013).
[82] G.M. Manzoni, G. Castelnuovo, and R. Proietti, Assessment of psychosocial risk factors is missing in the 2010 ACCF/AHA guideline for assessment of cardiovascular risk in asymptomatic adults, *J Am Coll Cardiol* **57** (2011), 1569-1570; author reply 1571.
[83] G.M. Manzoni, R.A. Cribbie, V. Villa, C.A. Arpin-Cribbie, L. Gondoni, and G. Castelnuovo, Psychological well-being in obese inpatients with ischemic heart disease at entry and at discharge from a four-week cardiac rehabilitation program, *Front Psychol* **1** (2010), 38.
[84] P. Capodaglio, C. Lafortuna, M.L. Petroni, A. Salvadori, L. Gondoni, G. Castelnuovo, and A. Brunani, Rationale for hospital-based rehabilitation in obesity with comorbidities, *Eur J Phys Rehabil Med* **49** (2013), 399-417.
[85] P. Capodaglio, G. Castelnuovo, A. Brunani, L. Vismara, V. Villa, and E.M. Capodaglio, Functional limitations and occupational issues in obesity: a review, *Int J Occup Saf Ergon* **16** (2010), 507-523.
[86] G. Riva, G. Castelnuovo, and F. Mantovani, Transformation of flow in rehabilitation: the role of advanced communication technologies, *Behav Res Methods* **38** (2006), 237-244.
[87] G. Castelnuovo, A. Gaggioli, F. Mantovani, and G. Riva, From psychotherapy to e-therapy: the integration of traditional techniques and new communication tools in clinical settings, *Cyberpsychol Behav* **6** (2003), 375-382.
[88] G. Castelnuovo and S. Simpson, Ebesity - e-health for obesity - new technologies for the treatment of obesity in clinical psychology and medicine, *Clin Pract Epidemiol Ment Health* **7** (2011), 5-8.
[89] A. Roth, N. Malov, D.M. Steinberg, Y. Yanay, M. Elizur, M. Tamari, and M. Golovner, Telemedicine for post-myocardial infarction patients: an observational study, *Telemed J E Health* **15** (2009), 24-30.
[90] R. Ramos-Rios, R. Mateos, D. Lojo, D.K. Conn, and T. Patterson, Telepsychogeriatrics: a new horizon in the care of mental health problems in the elderly, *Int Psychogeriatr* **24** (2012), 1708-1724.
[91] M.A. Espeland, S.R. Rapp, J.A. Katula, L.A. Andrews, D. Felton, S.A. Gaussoin, D. Dagenbach, C. Legault, J.M. Jennings, and K.M. Sink, Telephone interview for cognitive status (TICS) screening for clinical trials of physical activity and cognitive training: the seniors health and activity research program pilot (SHARP-P) study, *Int J Geriatr Psychiatry* **26** (2011), 135-143.
[92] G. Castelnuovo, G. Manzoni, G. Pietrabissa, S. Corti, E. Giusti, E. Molinari, and S. Simpson, Obesity and outpatient rehabilitation using mobile technologies: the potential mHealth approach, *Front Psychol* **5** (2014), 27.