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# 15 Supporting empowerment of elderly persons with multiple chronic conditions

## Evidence for sustainable practice improvement

*Elise Verot and Alexandra Lelia Dima*

We have reviewed four main directions in which research methods are evolving in France to sustain effective change at multiple levels, and given examples of methods and studies that could be considered as good starting points for future research.

- 1 Health sciences need to evolve toward interdisciplinarity and build bridges between clinical research, social sciences and health services research.
- 2 Researchers need to set priorities together with all stakeholders, especially the patients themselves, and engage them at all times of the research cycle, from study design to dissemination and long-term implementation of results.
- 3 Hierarchies of evidence need to give way to valuing and integrating multiple types of data and research findings produced by quantitative, qualitative and mixed methods.
- 4 Research needs to be planned proactively to insure successful implementation in clinical practice.

The transformation of healthcare services to address the needs of the elderly with multiple pathologies in France requires advancing in these four research directions, in line with international developments and the specific needs and cultural context of health and ageing in our country.

### Introduction

Providing healthcare for an ageing population is a current challenge in France, as world-wide. In 2017, 19 percent of the population living in France was aged 65 or over (INSEE, 2017). In the next 40 years, the number of people aged 75 or over will reach 11.9 million people, more than double that in 2007 (Haute Autorité de Santé (HAS), 2015a). Over 60 percent of these elderly persons live with two or more chronic conditions (Bähler et al., 2015) and need to be constantly and actively involved in efforts to maintain autonomy and health. Loss of autonomy and functional decline is costly for the individual and puts pressure on the limited resources of healthcare systems. For example, in France, the cost of dependency was estimated at \$23.7 billion in 2011 (or 1.1 percent of GDP) (Péres et al., 2017). Thus, a major challenge for public health in France is to improve health services to this increasing user group and maintain healthy and independent living in old age.

The French national health authorities acknowledge the challenge of chronic illness and the need to adapt health service delivery to the demographic, epidemiologic and

societal changes facing us. The current health strategy (2018–2022) aims to transform the healthcare system toward comprehensive prevention, equal access to care, ensuring quality across the care continuum and user-centered care (French Ministry of Health and Solidarity, 2018). For preventing loss of autonomy, the strategy recommends focusing on changing representations of ageing, raising awareness among healthcare professionals (HCPs) and the elderly of the importance of healthy ageing, promoting social participation, healthy eating and physical activity, and reorganizing services to improve screening and care of the most vulnerable users, especially by moving service provision closer to the living environment and strengthening primary care and social services. This transformation is supported by a strong commitment to continuous quality improvement processes which involve users and insure effective knowledge transfer. An emphasis is placed on the need to focus in initial and continuous HCP training on several competences such as understanding patients' perspectives, adopting multi-professional teamwork values and working in closer collaboration with other professions, as well as to update competences in line with the newest research evidence and clinical practice recommendations. To sustain this systemic change, health services research in France needs an equally transformative change toward a more interdisciplinary and participative approach in closer connection to training and practice.

Current developments in France are aligned to changes occurring internationally. More specifically, many countries have been promoting stronger links between practice, training and evidence and continuous quality improvement, together with building efficient digital infrastructures to support this process. This new paradigm is now known as the “Learning Health System” (LHS) (Friedman et al., 2015; Smith et al., 2012). Following the example of other sectors which have managed to create rapid cycles of knowledge generation and transfer to transform practice, the LHS has been proposed as an answer to the traditional approach to healthcare research, which was criticized as slow and with limited impact on clinical practice. The LHS represents a vision of healthcare where data and knowledge are generated continuously as output of routine care and feedback into service improvement via learning processes at different levels of the system. Beyond the technical challenge of implementing the tools to support this transformation (such as e-health platforms for data collection and sharing), advancing toward an LHS requires new ways of producing research evidence and integrating it into healthcare professional training and practice. Knowledge produced within separate disciplines using selected expertise and single methodologies will likely continue to play a role. However, answering urgent societal challenges requires an inclusive interdisciplinary approach that involves all stakeholders (patients, HCPs, policymakers, etc.), uses multiple methods and types of evidence, and works toward efficient implementation in routine practice.

In this chapter, we present an overview of the transformations that have started taking place in the last years in clinical practice, training and research in France and discuss examples of methods and studies locally and internationally. We highlight the value of using such methods in developing programs to support elderly patients with multiple chronic conditions maintain their autonomy and quality of life.

### **Healthcare for elderly patients with multiple chronic conditions: evolving practice and training**

Addressing the complex needs of elderly patients involves effective coordination of primary and secondary care, medical and social care, and the full continuum of preventive

to palliative care. Improving elderly care engages therefore the whole health system and is particularly difficult to achieve. In France, care delivery has been adapted in recent years to address more efficiently the needs of this age group. The French National Authority for Health (HAS) has highlighted the high prevalence of polyopathy in the elderly population and issued practical recommendations for its management in primary care (HAS, 2015b). These recommendations target persons over 75 years old at all autonomy levels and rely on an interprofessional approach coordinated by General Practitioners (GPs) aiming for patient empowerment and self-management support, continuity of care and personalized care plans. A notable feature of the HAS guidelines for managing polyopathy is the focus on collaboration between professional stakeholders, users' associations and institutional partners (HAS, 2015b).

Interprofessionality is a key feature (and challenge) of other similar recent system-level initiatives promoted by French health authorities. Several national programs have been piloted to improve the care of these users. Some of them do not perform as well as expected, while others have led to a definite change in roles and professional identities, allowing real cooperation between the different primary care professionals.

- ASALEE (a team-based primary care initiative) is an experimental program created in 2004 to improve the management of chronic diseases in the community. In a recent review, Fournier, Bourgeois and Naiditch (2018) noted a heterogeneity of practices. In some regions, this system has generated a paradigm shift in the provision of care; practices have changed, from an approach of individual and prescriptive care management to a paradigm of care based on multidisciplinary and patient education (Fournier, Bourgeois and Naiditch, 2018). Thus, individual care practices of participating HCPs have evolved toward multi-professional teamwork.
- Another initiative started in 2008, the MAIA (method of action for integrating support and home care services for supporting autonomy) aims to improve care coordination for people aged 60 and older suffering from Alzheimer's disease or neurodegenerative diseases. More specifically, it aims to integrate support and care services by involving professionals and caregivers who support people aged 60 and over who are losing their independence. The purpose of this method is to prevent discontinuity of care, insure that complex situations are adequately managed, implement case management and support the elderly in living in their own homes for as long as possible in the best conditions (CNSA, 2018). At present, local MAIA programs cover 98 percent of French territory. Yet, a recent MAIA assessment report warns that by remaining strictly associated with MAIA, the patients' care pathways are less efficient and can lead to competition between actors or overlapping public policy actions (CNSA, 2017).
- PAERPA (Health pathway for elderly people) is a pilot program in France launched in 2014 in several regions to improve integrated care for older people aged 75 years and older, aiming to support this target group in maintaining autonomy and living at home (Ministère de la santé et des solidarités, 2016). Its role is to strengthen home care, improve coordination of service providers and interventions, secure hospital discharge, avoid unnecessary hospitalizations and insure better use of medications. An initial evaluation showed limited progress, as the non-PAERPA regions obtained results similar to the PAERPA regions, in particular for cumulative length of hospital stay and 30-day rehospitalizations (Op et al., 2018). The authors conclude that such initiatives could only be effective if the professionals involved are ready to change their practices, which is a key barrier to consider (Op et al., 2018).

Thus, a common obstacle to these initiatives aimed at improving healthcare for elderly people with multiple chronic conditions is changing HCPs' practices toward a more collaborative and preventive approach.

In this context of increased pluriprofessionality and change of responsibilities along the care continuum, an overhaul of paramedical and medical training is being implemented. For example, the nursing profession is changing rapidly. Some research training programs are now specific to nurses and other allied health professionals. Since 2019, the Advanced Nurse Practitioner profession is structured within universities and officially recognized at a national level. Paramedical training now includes university-level courses, with the Bachelor's–Master's–Doctorate pathway becoming available. This new organization will facilitate transferability of knowledge from research into current practice, for a better performance of care and support. In the same time, initial efforts are being made toward inter-professional education in order to develop competences of interprofessional practice between medical and paramedical professions. Several recent innovations in teaching have also been implemented to develop HCPs' communication and patient involvement skills, in particular by involving patients in teaching and introducing Medical Humanities courses in initial HCP training (Aires et al., 2018; Fiquet et al., 2015). If sustained in the long term, these initiatives have the potential to empower the healthcare workforce to realize the necessary system changes planned at national level.

### **What research we need to improve care of elderly patients with multiple chronic conditions?**

Despite setting clear directions for change, the French health authorities recognize the lack of knowledge to realize the vision of evidence-based practice (EBP) in service improvement (HAS, 2015a). Even in healthcare and public health domains where abundant scientific evidence has been generated, traditional methods leave a significant gap between research and practice and need to be replaced by a more integrative and pluralistic view of evidence and practice improvement (Glasgow and Emmons, 2006). In research on elderly care, due to the complexity of the system changes mentioned above, several elements need to be considered to produce EBP. First, health sciences need to evolve toward interdisciplinarity and build bridges between clinical research, social sciences and health services research. Second, researchers need to set priorities together with all stakeholders, especially the patients themselves, and engage them at all times of the research cycle, from study design to dissemination and long-term implementation of results. Third, hierarchies of evidence need to give way to valuing and integrating multiple types of data and research findings produced by quantitative, qualitative and mixed methods. Fourth, research needs to be planned proactively to insure successful implementation in clinical practice. Initial steps have been made on these four fronts in France in the last years. We describe them below and give examples of research topics and studies to illustrate the value of these approaches.

### **Interdisciplinarity: the role of social sciences in health services research**

There is increasing awareness in health sciences research that, for medical innovations to be transferred in clinical practice and effectively improve health of citizens, numerous disciplines need to be involved. Moreover, improving and maintaining health is not only a matter of providing effective therapeutic agents or technology, but a complex interplay of

human interactions addressing physical, psychological, social and environmental influences on the well-being of individuals and groups. Generating evidence for better clinical practice is therefore necessarily interdisciplinary. It is now widely acknowledged that implementing new practices and/or changing existing practices within an organization or a system requires changing individual and collective behaviors (Atkins et al., 2017). Behavioral sciences, and social sciences in general, are therefore increasingly integrated in health services research to support system change in France and internationally. Moreover, given the breadth of services and professions involved in supporting autonomy and health in the elderly, realizing change in services for this population requires not only a focus on individual and organizational behaviors, but also a profound restructuring of how older age and patient-provider relationships are perceived by society at large. Thus, the national health strategy considers changing representations of ageing and health, as well as roles and responsibilities for maintaining health, as key priorities for the near future. On these two topics, social science research has an important contribution.

Ageism is found both at the institutional and individual level and appears to be omnipresent in our modern society; elderly people are commonly stereotyped as “lonely, depressed, incompetent, asexual, intellectually rigid, sickly and senile” and they expect to be confronted with such stereotypes in medical consultations (Macrae, 2018). Health sociologists, elderly advocates and the elderly themselves have been denouncing the high prevalence of ageism in healthcare for several decades (Greene et al., 1986). HCPs may be more likely than the general public to develop negative attitudes toward ageing, as they commonly encounter elderly people suffering from chronic disease while “healthy” older people are generally not part of their active patient list (Greene et al., 1986). Three decades of research on the phenomenon indicate that HCP attitudes toward older adults have not changed substantially (Macrae, 2018). An interview-based survey of French adults aged 60 years or over indicated that 38 percent of respondents considered that French society perceives the elderly rather negatively, explained this perception by a lack of respect and support and many expressed themselves self-stereotyping (Macia, Chapuis-Lucciani and Boetsch, 2007). These perceptions were not related to respondents’ socio-demographic characteristics such as age, gender, level of education, marital status, living at home or in nursing home, or their autonomy in daily activities. Moreover, respondents reporting age stereotypes tended to report worse subjective health status, which was also strongly associated with dependency and education level. In an experimental study, French older adults exposed to negative age stereotypes were less willing to take risks, reported lower subjective health and extraversion, felt more lonely and requested more help compared to those exposed to neutral or positive stereotypes (Coudin and Alexopoulos, 2010). These results strongly suggest that dependency in old age is also a result of ageism, and a change in mentalities at a societal level, as well as specific training to HCPs to adopt positive representations of ageing and improve their communication skills, should be part of the efforts toward improving quality of life and autonomy in the elderly.

Changing attitudes on ageing toward a more positive discourse that describes the elderly as active, resourceful, socially connected individuals can be considered as part of a more general trend of shifting responsibilities toward self-care, as health services are restructured from a focus on acute care in highly specialized hospitals toward chronic care in the community. As length of hospital stays decreases, patients are required to navigate complex care pathways that involve many providers in the territory and take an active role in their care. By contrast, the hospital culture traditionally positions the patient in a passive role in relation to HCPs involved in their care; promoting new ways of interaction consistent with

chronic care, such as the introduction in 2009 of Therapeutic Patient Education in France, has required sustained efforts in changing representations of all actors involved (Obertelli et al., 2015). Support for empowerment and patient-centered care are terms commonly used to represent an approach to healthcare in which patients are supported to participate in choosing, planning and implementing their treatment depending on their needs, preferences and individual situation. This approach is already used in common practice in many countries, yet it is not yet widely implemented in France (Härter et al., 2017). Patient participation has increased in recent years throughout Europe, particularly for younger people and those suffering from chronic conditions; however, the term is still commonly understood as following treatment recommendations within a more traditional paternalistic patient–provider relationship, shared decision-making is perceived by many as time-consuming and a potential source of conflict, patient–provider communication skills are limited, and many HCPs and patients find it difficult to share responsibilities for health-related goals and choices (Commission européenne, 2012). In France, the current organization of nursing care tends to maintain a paternalistic and prescriptive way of care regarding patients suffering from chronic diseases (Verot et al., 2019).

To date, social science research on this topic in France has been mainly limited to observational and descriptive studies, both qualitative and quantitative. We can identify therefore a strong need for this research to be followed up with interventions for enacting change in clinical practice, whether media campaigns for encouraging positive ageing attitudes, initial and continuous training for HCPs and allied professions on reinforcing perceptions of the elderly as resourceful, or individual or group interventions to support attitude and behavior change in the elderly themselves, in healthcare facilities or in the community. While many such initiatives are currently promoted by public and associative organizations, accompanying them with appropriate research and evaluation would increase efficiency in the long term by building the necessary evidence base.

### **Engaging older adults in the co-construction of healthcare services and research**

Engaging stakeholders in the transformation of healthcare systems has been promoted lately in many countries, on both ethical and operational grounds, and in close connection with the patient empowerment movement described above. A realist synthesis performed by a Canadian team aiming to engage frail older adults and their caregivers in this research has identified numerous frameworks used in different contexts to describe how, why and where engagement takes place (McNeil et al., 2016). They integrated these frameworks into a program theory for engagement of older adults, which consists of five steps. Briefly, they propose that, for effective engagement, investigators need to (1) identify and address environment-specific constraints and opportunities, such as policy documents, organizational support, and adapting location and timing of meetings to age-related challenges, (2) know the characteristics and preferences of the target group and plan to insure diversity and meet expectations, (3) establish relationships by being flexible and encourage informal open exchanges, (4) build these relationships sustainably based on shared objectives for research and planning and regular co-evaluation of the engagement strategies; and (5) insure smooth transition between projects by providing sufficient and accessible information for continued engagement. This structured process enables participants to choose their desired level of engagement based on long-term relations of trust with investigators.

While this methodology has been formalized primarily in the United Kingdom, Canada and the United States, it has strong similarities with the use of community-based participative research in healthcare (Demange, Henry and Preau, 2012). This approach was developed in France in the last three decades particularly in relation to research initiatives from community-based organizations mobilized against the HIV/AIDS epidemics and expanded to other health conditions and specific user groups. It gives a central role to partnerships between research participants, researchers and policymakers to produce knowledge that is more relevant, timely, efficient and ethical. Several large-scale online initiatives to engage healthcare users and the general public such as *Seintinelles* (Bauquier, Pannard and Préau, 2017) and *ComPaRe* (Tran et al., 2019) have helped prioritize research questions and boost research participation. At policy level, the voice of patients, many of them elderly with multiple chronic conditions, are heard via the involvement of patient associations. However, as detailed by McNeil et al. (2016), older adults require adaptations of these methods for effective engagement, particularly to address practical constraints and achieve real integration of needs and expertise at all stages of a research or practice improvement project.

One example of research on methodology development for patient engagement is a study conducted in primary care by a Canadian team (Haesebaert et al., n.d.). The researchers aimed to develop and test a six-session (12-month) protocol for involving users in practice improvement initiatives following a participatory action research cycle (EQUIPPS) consisting of four steps: setting priorities (reflect), planning relevant actions given the local context and influencing factors (plan), implementing these actions (act) and assessing impact on practices (observe). This process was followed by a team of 12 patients/caregivers, one HCP (GP or nurse) and one manager, to insure representation of relevant stakeholders in this particular setting. Feasibility was assessed in terms of process, resources, management and research using both quantitative data. Pilot work has evaluated EQUIPPS as a feasible framework for such contexts and could be further adapted to French primary or secondary care settings.

Thus, while an approach specific to elderly populations is still to be developed in France, several elements exist in work with other user groups and can be adapted to research with elderly persons. Following the Canadian examples, successful implementation of this patient engagement resides in a systematic process of building and maintaining long-term relationships.

### **Mixed methods: qualitative and quantitative evidence for understanding and changing practice**

Researchers have been using quantitative and qualitative methods for decades, yet the mixed-method methodology has only recently been formalized and presented as a stand-alone research paradigm (Burke Johnson, Onwuegbuzie and Turner, 2015; Creswell and Plano Clark, 2011). Quantitative and qualitative research have often been described as opposites in more traditional views of research as a source of disciplinary expertise, but in the context of increasing interdisciplinarity and stakeholder dialog mixed-methods research has gained traction. The need for understanding both quantitatively and qualitatively the experience of care from the perspective of all actors involved becomes even more prominent in ageing research, given the complex network of contributors in health and social care that requires particular attention to both personal experience and interactions, and population level phenomena. Numerous design options are available to structure data



collection, analysis and interpretation either consecutively (sequential, transformative and multiphase designs) or simultaneously (convergent and embedded designs) (Creswell and Plano Clark, 2011). The distinguishing feature of mixed-methods research is that, instead of concatenating results, it combines different elements (which can be data, viewpoints, methods) in order to amplify understanding (Burke Johnson, Onwuegbuzie and Turner, 2015). Thus, they are particularly appropriate for accompanying change on multiple levels.

One inevitable change for healthcare systems is adapting to increasingly prevalent technology. In research with older adults, telemedicine and home care technology requires substantial testing for best results as often technology represents a barrier in accessing care. A research program involving mixed methods has been developing in France around the use and acceptability of Social Assistive Robots (SAR) for the elderly and their caregivers. A mixed-methods study using survey and focus group data investigated acceptability by three potential user groups – persons with cognitive impairment, informal caregivers and healthy older adults – of several SAR designs and use scenarios (Pino et al., 2015). Combining qualitative and quantitative data (e.g., by comparing the proportion of occurrences of relevant themes in the three groups), the authors were able to also point to different priorities, such as increased usability concerns from caregivers, and rejection of human-like SARs by healthy elderly but not by other groups. Another study by the same team used a Living Lab set-up to assess actual interactions with a SAR via questionnaires, interviews, usability-performance measures and focus group methods (Wu et al., 2014). This approach allowed researchers to capture a range of conflicting attitudes and beliefs about SAR use: on one hand perceived ease of use and amusement, yet on the other low intention to use and perceived usefulness, as well as barriers related to stigmatization and ethical/societal issues. Developing technology that provides long-term benefits and is sustainably integrated in patient care requires further testing with other actors in the healthcare ecosystem and obtaining multiple types of evidence throughout development and implementation. Mixed-methods approaches are particularly appropriate for this type of applied research.

While methodological literature on mixed methods is still limited in France, examples of their application in various healthcare domains are increasing, including studies with older adults. As with patient engagement protocols, conducting such research needs to take into account the specificities of this population by adapting quantitative and qualitative data collection to their preferences and practical constraints. Careful project planning needs to be based on solid theory and prior evidence at design stage, and expectations of participants appropriately managed throughout the whole process of developing and piloting of care innovations.

### **Implementation science: producing evidence fit for practice**

Implementation science is a new discipline that emerged from criticisms regarding the lack of impact of research evidence on clinical practice. It aims to facilitate the transfer of new research knowledge in routine practice by understanding the clinical context of knowledge utilization and identifying and addressing barriers to uptake of evidence-supported tools and practices. Implementation science has been enriched with theoretical approaches to address different implementation challenges and has produced its own theoretical frameworks or models (Nilsen, 2015). In an international survey conducted among 223 researchers, more than 100 different implementation theories were reported to be used, from different disciplines: implementation science, health behavior, organizational behavior, sociology and management. Choosing among all these different models could be confusing

for research teams, therefore the authors propose a list of criteria that researchers could use to make and justify their theory choices, while acknowledging the possibly limited benefit of prescriptive guidance given the diversity of scientific objectives and priorities (Birken et al., 2017).

To insure successful and sustainable deployment of evidence-based quality improvement initiatives, it is essential to understand the barriers and facilitators associated with the relevant behaviors (Curtis et al., 2017). The Theoretical Domains Framework (TDF) is a framework increasingly used by research teams worldwide (Birken et al., 2017) and helps identify barriers and facilitators for behavior change, including the transfer of EBP in routine practice (Cane, O'Connor and Michie, 2012; Michie et al., 2005). Linked to the COM-B model and the Behaviour Change Wheel (BCW), it can also be used to address barriers to interprofessional practice (Atkins et al., 2017). The initial TDF version consists of 12 theoretical domains grouping numerous behavioral determinants (Glasper and Rees, 2016): (1) knowledge, (2) skills, (3) social/professional role and identity, (4) beliefs about abilities, (5) beliefs about consequences, (6) motivation and goals, (7) memory, attention and decision processes, (8) social context and resources, (9) social influences, (10) emotional regulation, (11) behavioral regulation and (12) nature of behavior (Michie et al., 2005). These domains can be further condensed into three sources of behavior forming the more recent COM-B model, which stipulates that human behavior (B) results from the interaction between personal physical and psychological abilities (C), to exploit social and environmental opportunities (O) through reflective and automatic motivation (M) (Alexander, Brijnath and Mazza, 2014). Each TDF domain can be mapped onto one component of the COM-B model, which can be used to further structure and simplify the classification of behavior determinants and link to relevant actions at different moments in the research process. Based on a review of 19 intervention frameworks, the BCW was built around the three components of the COM-B and proposes several intervention functions and policy categories for intervention developers to consider in order to insure the best implementation of the change of practices envisaged (Michie, Atkins and West, 2014). It specifies theoretical links between nine functions (e.g., education, environmental restructuring, enablement) and seven policy categories (e.g., service provision, guidelines, environmental/social planning) which intervention developers can choose to act upon the behavior determinants previously mapped on the TDF and COM-B.

In France, implementation science is beginning to develop. For example, the TDF and its associated tools, the COM-B and BCW, have proven useful in a quality improvement initiative we are currently conducting on patient empowerment in an oncology context. In chronic disease, patient empowerment has been a key goal for several years. Specifically in oncology, the importance of long-term self-management by patients and their daily decision-making regarding their treatment, physical activity or diet are major concerns in the management and support of patients (Casalino, 2005; Lorig et al., 2001). An assessment tool measuring patient empowerment is being prepared for deployment in routine oncology nurse practice at several hospital sites. Nurses would use this tool to adapt the management of, and thus provide tailored support for, patient empowerment. To insure a good fit with the current routine care processes, we conducted a preliminary study to understand the social representations of HCPs involved in cancer care toward patient empowerment and the possible use of this tool. (Verot et al., 2019) Thus, a qualitative study was carried out in three cancer treatment centers representative of the cancer treatment offer in the territory.

The 12 TDF domains represented the basis of our interview guide as we aimed to understand EBP implementation issues during semi-structured interviews with physicians, nurses, psychologists and nutritionists involved in the care of patients undergoing cancer treatment. We followed published recommendations regarding the analysis of TDF-generated data for studying implementation issues (Atkins et al., 2017) and performed two analyses using Nvivo 11 pro (QSR international). The first analysis was deductive; it consisted of reading the participants' responses, assessing their relevance to the definitions of the domains and then assigning them to one or more domains. This analysis aimed to identify the determinants to map on the COM-B model and the BCW in a following stage in order to adapt the tool implementation to the clinical context. The second analysis was an inductive one, consisting of analyzing the same data to find out more about the representations of the professionals interviewed. Using the TDF enabled us to identify three major domains that were perceived by participants as having a major influence on the implementation of new nursing practices: "Environmental and contextual resources", "Social influences" and "Beliefs about consequences". These results indicated that implementing these practices must address barriers categorized under these three domains, all of which corresponding to the COM-B reflective motivation component. Thus, we subsequently used the COM-B model and the BCW to design and deliver a short course tailored to the caregivers involved and the context of their practice. This course now incorporates the intervention categories recommended by the BCW to counter the barriers inherent in the three domains, including an education component, a persuasion and incentivization component, followed by a practical training phase.

The TDF proved effective in collecting a broad range of representations within an acceptable timeframe for HCP practice (Godin, 2012), which is important particularly given the limited time HCPs can allocate to research. Our example highlights the need and usefulness of taking a theoretical framework such as TDF linked to the COM-B model and the BCW to detect obstacles and facilitators to the transfer of EBP in routine care practice. This makes it possible to design a tailored intervention to insure better acceptability of new care protocols deployed in nursing practice. Changing individual and collective behaviors is best prepared using implementation science methods as presented above, in order to guarantee good conditions for deployment of new practices and to promote their adoption and sustainability. Although to our knowledge such methods have not yet been used in service improvement programs targeting specifically the elderly, we expect their use to increase in the next years.

## **Summary and conclusions**

In relation to the recent developments in healthcare practice and training, we have reviewed four main directions in which research methods are evolving in France and internationally to sustain effective change at multiple levels and given examples of methods and studies that could be considered as good starting points for future research. Interdisciplinarity is increasingly valued, in particular social science approaches to understanding societal perceptions of ageing and empowerment. Multiple stakeholder engagement frameworks have been proposed and applied to elderly healthcare users worldwide and need to be adapted and implemented in French research and practice. Mixed-methods designs are increasingly being applied in order to combine different types of complementary evidence for developing new care protocols and tools. Implementation science is emerging as a rich set of practical tools for generating evidence that can guide organizational change processes at

different levels of the healthcare system. The transformation of healthcare services to address the needs of the elderly with multiple pathologies in France requires advancing in these four research directions, in line with international developments and the specific needs and cultural context of health and ageing in our country.

## References

- Aires, M.J., Gagnayre, R., Gross, O., Khau, C.-A., Haghghi, S., Mercier, A., Ruelle, Y. and Marchand, C. (2018). The patient teacher in general practice training. *Journal of Patient Experience*. doi.org/10.1177/2374373518803630.
- Alexander, K.E., Brijnath, B. and Mazza, D. (2014). Barriers and enablers to delivery of the healthy kids check: an analysis informed by the theoretical domains framework and COM-B model. *Implementation Science*, 9(60). doi.org/10.1186/1748-5908-9-60.
- Atkins, L., Francis, J., Islam, R., O'Connor, D., Patey, A., Ivers, N., Foy, R., Duncan, E.M., Colquhoun, H., Grimshaw, J.M., Lawton, R., Michie, S., O'connor, D., Patey, A., Ivers, N., Foy, R., Duncan, E.M., Colquhoun, H., Grimshaw, J.M., Lawton, R. and Michie, S. (2017). A guide to using the theoretical domains framework of behaviour change to investigate implementation problems. *Implementation Science*, 12(77). doi.org/10.1186/s13012-017-0605-9.
- Bähler, C., Huber, C.A., Brünger, B. and Reich, O. (2015). Multimorbidity, health care utilization and costs in an elderly community-dwelling population: a claims data based observational study. *BMC Health Services Research*, 15. doi.org/10.1186/s12913-015-0698-2.
- Bauquier, C., Pannard, M. and Préau, M. (2017). Une démarche innovante pour favoriser la recherche communautaire et faire vivre la démocratie sanitaire en oncologie: Les Seintinelles. *Sante Publique*, 29, 547–550. doi.org/10.3917/spub.174.0547.
- Birken, S.A., Powell, B.J., Shea, C.M., Haines, E.R., Alexis Kirk, M., Leeman, J., Rohweder, C., Damschroder, L. and Presseau, J. (2017). Criteria for selecting implementation science theories and frameworks: results from an international survey. *Implementation Science*, 12. doi.org/10.1186/s13012-017-0656-y.
- Burke Johnson, R., Onwuegbuzie, A.J. and Turner, L.A. (2015). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, 1, 1–23. doi:10.1177/1558689806298224.
- Cane, J., O'Connor, D. and Michie, S. (2012). Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation Science*, 7(37). doi.org/10.1186/1748-5908-7-37.
- Casalino, L.P. (2005). Disease management and the organization of physician practice. *JAMA*, 293(485). doi.org/10.1001/jama.293.4.485.
- CNSA (2017). *Évaluation des dispositifs MAIA: Rapport final d'évaluation*. Available at: www.cnsa.fr/rapport-devaluation-des-dispositifs-maia [Accessed 14 September 2019].
- CNSA (2018). *L'action des MAIA au service des territoires et de l'évolution du système de santé: Retours d'expériences*. Available at: www.cnsa.fr/documentation/integration\_2011-2018\_retours\_dexperiences\_vf.pdf [Accessed 14 September 2019].
- Commission européenne (2012). *Eurobaromètre étude qualitative: participation des patients*. Étude qualitative-TNS Qual+.
- Coudin, G. and Alexopoulos, T. (2010). "Help me! I'm old!" How negative ageing stereotypes create dependency among older adults. *Ageing and Mental Health*, 14, 516–523. doi.org/10.1080/13607861003713182.
- Creswell, J.W. and Plano Clark, V. (2011). *Designing and conducting mixed methods research*. 2nd ed. Thousand Oaks, CA: Sage.
- Curtis, K., Fry, M., Shaban, R.Z. and Considine, J. (2017). Translating research findings to clinical nursing practice. *Journal of Clinical Nursing*, 26, 862–872. doi.org/10.1111/jocn.13586.
- Demange, E., Henry, E. and Preau, M. (2012). *From collaborative research to community-based research: a methodological toolkit*. Paris: ANRS.

- Fiquet, L., Huge, S., Annezo, F., Chapron, A., Allory, E. and Renaut, P. (2015). An interprofessional training program to learn to work together. the perception of health care students. *Pédagogie Médicale*, 16, 105–117. doi.org/10.1051/pmed/2015018.
- Fournier, C., Bourgeois, I. and Naiditch, M. (2018). Action de santé libérale en équipe (Asalée): un espace de transformation des pratiques en soins primaires. Questions d'économie de la santé (IRDES). French Ministry of Health and Solidarity (2018). National health strategy 2018–2022.
- Friedman, C.P., Rubin, J., Brown, J., Buntin, M., Corn, M., Etheredge, L., Gunter, C., Musen, M., Platt, R., Stead, W., Sullivan, K. and Van Houweling, D. (2015). Toward a science of learning systems: a research agenda for the high-functioning learning health system. *Journal of the American Medical Informatics Association*, 22, 43–50. doi.org/10.1136/amiajnl-2014-002977.
- Glasgow, R.E. and Emmons, K.M. (2006). How can we increase translation of research into practice? Types of evidence needed. *Annual Review of Public Health*, 28, 413–433. doi.org/10.1146/annurev.publhealth.28.021406.144145.
- Glasper, A. and Rees, C. (2016). *Nursing and healthcare research at a glance*. Chichester, UK: Wiley.
- Godin, G. (2012). *Behaviours in the field of health: understanding to better intervene [Les comportements dans le domaine de la santé: comprendre pour mieux intervenir]*. Montréal: Presses de l'Université de Montréal.
- Greene, M.G., Adelman, R., Charon, R. and Hoffman, S. (1986). Ageism in the medical encounter: an exploratory study of the doctor-elderly patient relationship. *Language and Communication*, 6, 113–124. doi.org/10.1016/0271-5309(86)90010-8.
- Haesebaert, J., Samson, I., Lee-Gosselin, H., Guay-Bélanger, S., Proteau, J.-F., Drouin, G., Guimont, C., Vigneault, L., Poirier, A., Sanon, P.-N., Roch, G., Poitras, M.-È., Leblanc, A. and Légaré, F. (n.d.). How to engage patients in research and quality improvement in community-based primary care settings: protocol for a participatory action research pilot study. doi.org/10.1186/s40900-018-0113-3.
- Härter, M., Moumjid, N., Cornuz, J., Elwyn, G. and van der Weijden, T. (2017). Shared decision making in 2017: international accomplishments in policy, research and implementation. *Zeitschrift für Evidenz, Fortbildung und Qualität im Gesundheitswesen*, 123–124, 1–5. doi.org/10.1016/j.zefq.2017.05.024.
- Haute Autorité de Santé (HAS) (2015a). *Note méthodologique polypathologie de la personne âgée*, 36. Available at: [www.has-sante.fr/upload/docs/application/pdf/2015-04/note\\_methodologique\\_polypathologie\\_de\\_la\\_personne\\_agee.pdf](http://www.has-sante.fr/upload/docs/application/pdf/2015-04/note_methodologique_polypathologie_de_la_personne_agee.pdf) [Accessed 14 September 2019]
- Haute Autorité de Santé (HAS) (2015b). *Key points: what needs to be done managing elderly persons with multiple illnesses in primary care*. Available at: [https://prod-web.has-sante.fr/jcms/c\\_2028194/en/managing-elderly-persons-with-multiple-illnesses-in-primary-care](https://prod-web.has-sante.fr/jcms/c_2028194/en/managing-elderly-persons-with-multiple-illnesses-in-primary-care) [Accessed 14 September 2019].
- INSEE (2017). *France, portrait social*. Paris: INSEE.
- Lorig, K.R., Ritter, P., Stewart, A.L., Sobel, D.S., Brown, B.W., Bandura, A., Gonzalez, V.M., Laurent, D.D. and Holman, H.R. (2001). Chronic disease self-management program: 2-year health status and health care utilization outcomes. *Medical Care*, 39, 1217–1223.
- Macia, E., Chapuis-Lucciani, N. and Boetsch, G. (2007). Stéréotypes liés à l'âge, estime de soi et santé perçue [Age stereotypes, self-esteem and self-rated health]. *Sciences sociales et santé*, 25, 79–106. doi.org/10.3917/sss.253.0079.
- McNeil, H., Elliott, J., Huson, K., Ashbourne, J., Heckman, G., Walker, J. and Stolee, P. (2016). Engaging older adults in healthcare research and planning: A realist synthesis. *Research Involvement and Engagement*. doi.org/10.1186/s40900-016-0022-2.
- Macrae, H. (2018). “My opinion is that doctors prefer younger people”: older women, physicians and ageism. *Ageing & Society*, 38, 240–266. doi.org/10.1017/S0144686X16001021.
- Michie, S., Atkins, L. and West, R. (2014). *The behaviour change wheel: a guide to designing interventions*. London: Silverback.
- Michie, S., Johnston, M., Abraham, C., Lawton, R., Parker, D. and Walker, A. (2005). Making psychological theory useful for implementing evidence based practice: a consensus approach. *Quality and Safety in Health Care*, 14, 26–33. doi.org/10.1136/qshc.2004.011155.

- Ministère de la santé et des solidarités (2016). *PAERPA Parcours Santé des aînés*. Available at: <https://solidarites-sante.gouv.fr/systeme-de-sante-et-medico-social/parcours-des-patients-et-des-usagers/le-parcours-sante-des-aines-paerpa/article/le-dispositif-paerpa> [Accessed 22 September 2019].
- Nilsen, P. (2015). Making sense of implementation theories, models and frameworks. *Implementation Science*, 10. doi.org/10.1186/s13012-015-0242-0.
- Obertelli, P., Pouteau, C., Haberey-Knuessi, V., Dancot, J., Le Roux, A. and Llambrich, C. (2015). Evolution des relations soignants: malades au regard des pratiques d'éducation thérapeutique. Available at: <https://halshs.archives-ouvertes.fr/halshs-01288026/document> [Accessed 22 September 2019].
- Op, Z., Bricard, D., Le Guen, N. and Penneau, A. (2018). Evaluation d'impact de l'expérimentation Parcours santé des aînés (Paerpa): Premiers résultats. Questions d'économie de la santé (IRDES).
- Péres, K., Matharan, F., Daien, V., Nael, V., Edjolo, A., Isabelle Bourdel-Marchasson, I., Ritchie, K., Tzourio, C., Delcourt, C. and Carriere, I. (2017). Visual loss and subsequent activity limitations in the elderly: the French three-city cohort. *American Journal of Public Health*, 107, 564–569. doi.org/10.2105/AJPH.2016.303631.
- Pino, M., Boulay, M., Jouen, F. and Rigaud, A.S. (2015). "Are we ready for robots that care for us?" Attitudes and opinions of older adults toward socially assistive robots. *Frontiers in Ageing Neuroscience*, 7, 1–15. doi.org/10.3389/fnagi.2015.00141.
- Smith, M., Saunders, R., Stuckhardt, L. and McGinnis, J.M. (2012). *Best care at lower cost: the path to continuously learning health care in America*. Washington, DC: National Academies Press.
- Tran, V.T., Riveros, C., Péan, C., Czarnobroda, A. and Ravaud, P. (2019). Patients' perspective on how to improve the care of people with chronic conditions in France: a citizen science study within the ComPaRe e-cohort. *BMJ Quality and Safety*, 1–12. doi.org/10.1136/bmjqs-2018-008593.
- Verot, E., Régnier-denois, V., Feld, D., Rivoirard, R. and Chauvin, F. (2019). French Health professionals' attitudes about patient empowerment in the cancer care pathway. *Clinical Nursing Studies*, 7.
- Wu, Y.H., Wrobel, J., Cornuet, M., Kerhervé, H., Damnée, S. and Rrigaud, A.S. (2014). Acceptance of an assistive robot in older adults: a mixed-method study of human-robot interaction over a 1-month period in the living lab setting. *Clinical Interventions in Ageing*, 9, 801–811. doi.org/10.2147/CIA.S56435.