



Short Communication

# Fostering Interdisciplinary Research and Empowerment Strategies for Older People with Chronic Conditions. The EMPOWERED Project

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## Abstract

Interdisciplinary research is useful when answers to complex social problems are sought. As a method is praised for the multiple benefits that provides in the enlargement of scientific knowledge and interdisciplinary collaboration. The EMPOWERED Project is a paradigm of interdisciplinary research. This Project aimed to utilize IoT technology for supporting the independent living for older people with chronic diseases. The contribution of interdisciplinary research to the enhancement of self-management strategies and the autonomous living of this population group was highlighted throughout the four stages of the Project and reflected in its final results. Strategies for eliminating barriers to interdisciplinary research are recommended.

**Keywords:** Interdisciplinary research, Older people, Chronic disease, Empowerment, Self-management strategies

## Introduction

The term interdisciplinary research refers to the development of a research methodology that brings together experience and expertise from various scientific fields. Interdisciplinary research is based on a common understanding of different theoretical frameworks and the mutual interpenetration of diverse scientific, research and methodological approaches [1].

Interdisciplinary studies were defined as “those which address research problems that are too broad or complex and therefore cannot be adequately resolved by a single discipline. The answer to these problems is based on different disciplines, which combine their knowledge in order to have a holistic view and understanding of the problem and its solution” [2].

The main characteristics of interdisciplinary studies involve a holistic approach to research as well as the combination of data, techniques, tools, concepts and theories from various scientific fields. The importance of interdisciplinarity in research lays on the fact that all sciences are distinct at the academic level only. In everyday practice sciences interact with each other and problems raised at a daily level are addressed by different scientific perspectives. Solving these problems requires knowledge and participation from all involved scientific fields. The interdisciplinary approach to research leads to the minimization of methodological errors and the development of effective policy-making in the field under investigation [3,4].

Basic principles in the interdisciplinary research process encompass the effective formulation of the research question, the identification of relevant stakeholders and the development of an operational framework based on the knowledge and theory deriving from the involved scientific fields. Furthermore, identification of areas of conceptual conflict or misinterpretation, conflict resolution and finding a common understanding between the different scientific fields are vital components of an interdisciplinary research team. Mutual understanding is necessary for creating a common ground for action and exploring effectively the research problem through the various scientific approaches. Finally, this will lead to the solution of the problem through a joint interdisciplinary intervention [5].

Knowledge development and advancement of skills in the formulation of good research questions, solving problems beyond the boundaries of a single science are some of the

benefits of interdisciplinary research. Even more, designing and implementing novel and complex methodological approaches may provide better understanding and meaningful answers to complex social and organizational issues. Enhanced credibility of research and multi-stakeholder involvement can be regarded as rewards for interdisciplinary research teams [6].

## EMPOWERED Project: A Paradigm of Interdisciplinary Research

The EMPOWERED Project is an example of interdisciplinary research venture which intended to utilize IoT technology for enhancing independent living for older people with chronic diseases. The Project aimed to improve autonomous living and self-management strategies for people with chronic diseases by combining a smart, mobile, digital personal health management assistant with a monitoring system and effective communication mechanisms and tools to transmit appropriate data to formal and informal caregivers, by utilizing the capabilities offered by IoT technologies. Through this process, seniors living with chronic conditions will be empowered to better manage their health while formal and informal caregivers will be able to monitor the patients' condition efficiently and safely. Within the frame of this Project, the extensive scientific knowledge and expertise from a variety of scientific fields were used with the aim to create a state-of-art service.

The interdisciplinary team which formed for achieving the goals of the Project aimed at synthesizing realistic research approaches and combining knowledge and methodology deriving from different scientific disciplines.

The contribution of interdisciplinary research to the enhancement of self-management strategies and autonomous living of the older people with chronic diseases was highlighted and reflected through the four stages and the results of the EMPOWERED Project.

The implementation of the EMPOWERED included four critical stages: a) Recording and analyzing the users' needs, b) Designing and developing devices and sensors, c) Integration of technical algorithms, d) Pilot study and evaluation of results. An interdisciplinary research team of experts with distinct roles was formed, allowing the parallel progress of activities per discipline and merging interdisciplinary experience and expertise to achieve the predetermined objectives of each stage. In each stage the necessity and the benefits of interdisciplinary research were highlighted as presented in the following scheme:



**Scheme 1:** Empowering older people with chronic conditions through an interdisciplinary research process.

### The Research Problem and the Expected Results of the EMPOWERED Project

Caring and monitoring health of older people is one of the most important challenges that Western societies will face in the next few years. Globally, the share of the population aged 65 years or over is expected to increase from 9.3 per cent in 2020 to around 16.0 per cent in 2050. By 2050, this population group will be approximately reached 1.5 billion people in 2050 [7]. The average lifespan of older people is increasing. More than 50% of senior patients do not comply with their medication, according to the World Health Organization, which results in 190,000 avoidable deaths and €100 billion in costs annually in Europe, while chronic diseases are responsible for over 70% of total health expenditure in EU countries [8,9].

As this is a complex social problem of great importance, supporting autonomous living for older people with chronic

diseases through the development of self-management strategies is considered to be an essential action.

As the ultimate goal of the Project was to increase the time during which older people can live safely and independently in their home, having the minimum possible physical presence of caregivers, the expected results of the Project involved:

- Increase of independent living expectancy and at the same time reduce the time that a health professional or an informal caregiver should have a physical presence at the senior's house.
- Adoption of m-health systems that will contribute to cost reduction, increased efficiency and quality of life, but also to the provision of upgraded health services (e.g. Healthy Living Apps, Mental Health Apps, Symptom Checking Apps)
- Creation of a state-of-the-art service, which will be developed and piloted and then can be used on a more permanent basis.

- Creation of an integrated platform, combining a smart, portable, digital health management assistant with a monitoring system; effective communication and transfer of necessary data to formal and informal caregivers, utilizing whenever required, the possibilities given by IoT technologies.

Having achieved these results, both the senior citizens and the caregivers may gain further benefits. For example, by identifying and focusing on the explicit needs of the individuals, specific goals to improve and motivate healthier behaviors can be established. On the other hand, the informal caregivers can have access to targeted, reliable information and educational material in order to better support the older person and to seek assistance from the health care professionals for avoiding complications or preventing problems. Positive effects on seniors' social environment, by reducing burden and uncertainty can be also attained.

## Conclusion

Interdisciplinary cooperation and research have proved to be an important factor for the utilization of technology in managing the disease and enhance the independent living of the older people. Barriers to interdisciplinary research may involve the one-dimensional scientific perspective, the partial understanding of interdisciplinary research process, the lack of appreciation for the other sciences as well as the uncompromising and defensive scientific attitudes. Strategies for eliminating barriers to interdisciplinary research are recommended such as, appropriate selection of team members, mentorship focusing on team integration issues, fostering formal and informal communication strategies, creating a culture of interdisciplinary collaboration and promote interdisciplinary education at an early stage of higher education curricula.

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## References

1. Lorenzetti L, Jacobsen M, Lorenzetti DL, Nowell L, Pethrick H, et al. (2022) Fostering Learning and Reciprocity in Interdisciplinary Research. *Small Group Research*, 53:755–777.
2. Repko AF, Szostak R. (2016) *Interdisciplinary research: Process and theory* (3rd ed.). Thousand Oaks: Sage.
3. Szostak R. (2017) *Interdisciplinary Research as a Creative Design Process*. 17-33.
4. Darbellay F, Moody Z, Lubart T. (2017) *Creativity, Design Thinking and Interdisciplinarity*. Springer, Singapore.
5. Brown SA, Sparapani R, Osinski K, Zhang J, Blessing J, et al. (2023). Team principles for successful interdisciplinary research teams. *American Heart Journal Plus: Cardiology Research and Practice*, 23:100306.
6. Newell WH. (2007) Decision making in interdisciplinary studies. In G. Morçöl (Ed.), *Handbook of decision making*. New York: CRC.
7. United Nations. *The world population prospects 2019: highlights*. New York: United Nations; 2019.
8. Sabaté E. (2003) *Adherence to long-term therapies: evidence for action 2003* World Health Organization.
9. Brown MT, Bussell, JK. (2011). Medication adherence: WHO cares? *Mayo Clin Proc*, 86: 304-14.