**INTEREST IN META-RESEARCH IN GERIATRIC MEDICINE:**

**A SURVEY OF MEMBERS OF THE EUROPEAN GERIATRIC MEDICINE SOCIETY**

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**KEY SUMMARY POINTS**

**Aim:** To know the knowledge of the EuGMS members regarding meta-research, especially systematic reviews and meta-analyses.

**Findings**: Interest in systematic reviews and meta-analyses is high and there is a demand for education on these topics in relation to geriatric medicine**.**

**Message:** We need more resources in the EuGMS for education for meta-research tailored for geriatric medicine.

**ABSTRACT**

**Purpose**: There has been an exponential increase in meta-research, especially in the branch dealing with systematic reviews [SRs] and meta-analyses [MAs]. However, the knowledge regarding these topics in geriatric medicine is still poorly explored. We therefore undertook a survey of the current knowledge and needs in meta-research in geriatrics.

**Methods**: A short survey (taking approximately 5 minutes to complete) was freely available on the European Geriatric Medicine Society (EuGMS) website and disseminated via social networks by the EuGMS and the authors of the survey. The questionnaire was available during the whole year of 2019. The questionnaire specifically addressed demographic information, previous research activities and the knowledge of the participants on meta-research in geriatric medicine.

**Results**: The survey was completed by 291 participants from 36 different countries of about 20,000 EuGMS members (mostly with an aged betweem 55 to 64 years; 51.5% female; mainly from Italy and Germany). Most respondents (65.6%) reported reading more than 20 articles in the past year, but few (36.4%) read more than 10 SRs/MAs. Participants reported that SRs and/or MAs are important in clinical practice: 83.8% giving a score of >6/10, and 23.0% reporting 10. The large majority of the participants asked for more education in meta-research. In particular, there is need for educational courses for meta-research in geriatric medicine, online or in person, organized by the EuGMS.

**Conclusion**: Our survey shows that interest in SRs/MAs is high, and there is a demand for education on these topics in relation to geriatric medicine.

**Key words**: meta-analysis; systematic review; questionnaire; EuGMS.

**INTRODUCTION**

Systematic reviews and meta-analyses (SRs and MAs), namely the process of carefully synthesizing research evidence designed for answering specific questions in clinical practice, are traditionally considered the highest tier of the scientific pyramid. [[1](#_ENREF_1)] SRs and MAs can contribute significantly to improve clinical practice, increasing knowledge and identifying fields where evidence is lacking. However, many published SRs and MAs have been considered redundant, misleading, serving conflicting interests or overall low-quality, therefore multiplying the limitations of primary studies, rather than objectively and critically presenting them.[[2](#_ENREF_2), [3](#_ENREF_3)]These shortcomings are also applicable to geriatric medicine.[[4](#_ENREF_4)]

Over recent years, there has been a growing number of primary research articles.[[5](#_ENREF_5), [6](#_ENREF_6)] Physicians, others professionals working in clinical practice, and scientists need to be aware of recent developments within their professional area. Therefore, there is need for articles that summarize all available knowledge by using systematic processes (i.e. literature search, selecting relevant articles that answer certain research questions, estimating their potential risk of bias and summarizing reported effects). The Cochrane Collaboration developed methods and standards that can be used to produce SRs and MA, particularly of interventions. [[7](#_ENREF_7)] The updated Cochrane Handbook for Interventions contains the latest developments in this field.[[7](#_ENREF_7)] SRs and MAs are growing in number [[8](#_ENREF_8)], but published SRs differ in their methodological and reporting quality.[[9](#_ENREF_9)] To decide whether a research article (e.g. randomized controlled trial or systematic review) is of high quality and trustworthily, potential readers need to know the key issues of such research and article types.

In addition, geriatric medicine has some specific requirements that should be taken into account when performing a SR and/or MA. [[4](#_ENREF_4)] In particular, the accurate identification/inclusion of specific groups such as older persons pertinent to daily practice is crucial as well as the high drop-out rate of older people observed in randomized controlled trials (RCTs). In addition, the underrepresentation of older people in RCTs is another important criticism. [[4](#_ENREF_4), [10](#_ENREF_10), [11](#_ENREF_11)] Moreover, to the best of our knowledge, little is known about the interest and competence of geriatricians and physicians interested in the care of older people regarding SRs and MAs.

Given this background, to further gain information of geriatricians, clinicians and researchers interested in geriatric medicine, we assessed the scientific background, knowledge and opinions regarding meta-research in geriatrics through an online survey, using the network and membership tools of the European Geriatric Medicine Society (EuGMS).

**MATERIALS AND METHODS**

A formal approval to an Ethical Committee was not required since personal information was not collected. However, the questionnaire was approved by the Scientific Committee of the EuGMS. The data were fully anonymized and informed consent was provided by all participants..

We report the results of this survey according to the reporting guideline for survey research.[[12](#_ENREF_12)] Four authors (NV, GT, JD, CB) designed an online survey to collect information regarding the knowledge and interest of people involved in EuGMS activities across European countries. The survey was formatted using Google Forms and was sent out in January 2019 by the EuGMS secretariat to all EuGMS members. The survey was sent in English to all members. National member societies (e.g. German Society of Geriatrics (DGG) and Italian Society of Gerontology and Geriatrics (SIGG) or Italian Society Geriatrics Hospital and Territory (SIGOT)) were contacted via email to request dissemination among their members. Additionally, the survey was advertised during the oral presentation “Meta-research in older people: current evidence and the future” and an open call during the 15th EuGMS congress in Kraków, Poland, 2019.

The full questionnaire (**Supplementary Table 1)** was available online as link at the EuGMS homepage (<https://www.eugms.org/research-cooperation/special-interest-groups/systematic-review-and-meta-analysis.html>), and stayed online until 31st December 2019.

Questions were structured under three main headings: general characteristics/demographics, scientific background, knowledge and opinions regarding meta-research. All the questions were mandatory, except the final question regarding suggestions and opinions. The survey took approximately 5 minutes to complete.

All quantitative variables were reported descriptively as percentages (%) relative to the total number of participants included.

**RESULTS**

Overall, 291 participants from 36 different countries, mainly from Germany and Italy, of about 20,000 EuGMS members, responded to the survey. **Table 1** summarizes the questions and the most common answer to each question. In addition, also participants from Australia, Chile and South Africa responded to the survey. A slightly higher prevalence of females (51.5%) was observed and respondents aged 55-64 years were most represented across all age groups (28.5%). The majority of the respondents worked in hospitals (54.6%) and had less than 10 years from specialization (43.6%).

The majority of participants (65.6%) had read more than 20 scientific articles in the previous year, including 10-20 systematic reviews and/or meta-analyses (36.4%). Sixty percent of the respondents had published less than 10 articles to date (59.8%).

We investigated the participants’ knowledge and opinions regarding meta-research. Participants reported that SRs and/or MAs are important in their clinical practice. In a score between 0 and 10 for this question, 83.8% gave a score of 6 or more, with 23.0% scoring 10. Overall, they reported a lack of expertise in meta-research (54.6% gave <5/10). When asked directly, a strong need for education on reading and interpreting SRs and MAs (35.7% gave 8 or more to this specific question) emerged. Participants preferred the options of residential courses (30.6%), followed by online courses (20.6%). In this regard, about three quarters of the participants to the survey suggested that EuGMS should organize specific courses for meta-research, either in person or online.

Finally, we also asked to rate the importance of SRs and MAs. The majority of participants (74.9%) indicated that scientific papers of that type had significantly changed their clinical approach to patients. Regarding the quality of SRs and MAs, notably in the field of geriatrics, the participants indicated that the scientific quality is sufficient/good (24.4% said that the quality of these publications is 7/10) and that this kind of scientific paper can provide more information than original studies, both interventional and observational. Of the 291 participants, 86 (29.6%) had written a systematic review/meta-analysis themselves and they were mainly involved in the first steps of this type of research, i.e. bibliographic search or data extraction.

The final question was open-ended to acquire participants’ ideas on how research in geriatrics could be improved by the topic of systematic reviews and meta-analyses. When categorizing these answers, most participants indicated to improve: training for physicians/ geriatricians in research methods; collaborating in interdisciplinary teams and networking with colleagues; dissemination of important primary studies/ systematic reviews/ meta-analyses (also via geriatric journals); quality of systematic reviews/ meta-analyses (e. g. relevant research questions, thorough reporting, useful conclusions for practise, highlight research gaps); guideline implementation and transfer to clinical practice; and provision of educational courses.

Some participants also mentioned more money for research, more and better primary research (especially well-conducted RCTs), improving quality standards of geriatric journals, and offering translations in their native languages.

**DISCUSSION**

This survey, including 291 participants from 36 different European and extra-European countries, reports their knowledge, opinions and preferences regarding SRs and MAs relevant to geriatric medicine.

The academic engagement of the participants was overall good. In fact, many of them read several scientific articles during the previous year, even if the reading of systematic reviews and meta-analyses was limited to a small number, compared to the total of the articles read. This survey indicates that a sample of researchers interested in geriatric medicine have some experience of SRs and MAs but would value further education.

It should be noted that survey participants are often those scientifically more active and engaged. Therefore, even if they are not representative of the entire geriatric community, they should represent those who more often consult and read the literature. These participants strongly believed that systematic reviews and/or meta-analyses are of clinical importance have changed the clinical approach to their patients. The participants believed that education is needed and that the EuGMS should organize specific courses in this regard. Thus, a relevant educational need was detected by this survey.

The answers/ preferences indicated by the participants in the open question are in line with problems that were recently discussed and published by a group of research-active geriatricians from UK.[[13](#_ENREF_13)] They considered four areas of activity: involving clinicians in research, developing early-career researchers, getting research into clinical practice, and expanding the funding envelope. [[13](#_ENREF_13)]

Finally, systematic reviews and meta-analyses are considered as important, since they can include and summarize the (published) scientific knowledge of original studies from a certain research question. About a quarter of the interviewed participants believe that the systematic reviews and meta-analyses in geriatric medicine are of sufficient/good quality.

However, we believe that alternative, perhaps prospective, ways to assess what kind of research articles geriatricians read and how they find and understand the message, usability, quality and methodology of research papers, especially that of meta-research, are urgently needed for better assessing this important need.

This work has some strengths. In particular, the sample size included (291 participants from 36 different countries) is quite large, even if many participants were from Italy and Germany. However, some shortcomings should be recognized as well. The survey was conducted only in English: therefore, it is possible that people not speaking that language, but interested in the topic, did not participate. Second, there was a preponderance of early/mid-career researchers, and these views may not be representative of more junior or senior colleagues. It is possible that selection bias exists, i.e. those who were more active readers or researchers may had been more likely to complete the survey . Finally, as participants were asked information regarding the previous year recall bias may also be present.

In conclusion, our survey showed that interest in meta-research in the EuGMS setting is high, whilst knowledge is still limited, suggesting that education is needed. One of the next aims of the Special Interest Group of Systematic reviews and meta-analysis in healthy aging of the EuGMS will be to organize specific courses (online and/or by person) in order to reinforce the knowledge of people interested in meta-research in geriatric medicine and further extend the interdisciplinary network of clinicians, methodologists, and senior and early-stage researchers. In addition, the results of our survey will be used to guide and plan future research activities within the EuGMS.

**DECLARATIONS**

**Funding:** none.

**Conflicts of interest/Competing interests**: none.

**Ethics approval**: not pertinent

**Consent to participate**: not pertinent.

**Consent for publication**: not pertinent.

**Availability of data and material**: all the data are reported in Supplementary material in extenso.

**Code availability**: upon request to the corresponding author.

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