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Articles

Delirium Around the World: Performing An International Point Prevalence Study Increases Awareness for Delirium

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Delirium

Background

Global efforts to raise delirium awareness have been made over the past years, such as the formation of the iDelirium group and the institution, in 2017, of the annual World Delirium Awareness Day (WDAD) in March. In 2023, our group and researchers from around the world conducted a global one-day point prevalence study of delirium on WDAD. These strategies appear to improve delirium recognition and management.

Objective

To assess participants' perceived impact of participating in the WDAD 2023 one-day point prevalence study and to gather feedback on the survey process to inform future campaigns.

Methods

An online survey was administered to multiple national and clinical collaborators from 44 countries participating in the one-day global point delirium prevalence study on WDAD 2023. Using SurveyMonkey®, the survey was distributed via a snowball system, with participants' consent implied through their involvement. The survey, developed iteratively to balance time and detail, consisted of six core questions, including closed and open formats. Data were collected from September 9th to October 9th, 2023, and qualitative and quantitative analyses were performed using Excel®. Quantitative data underwent statistical analysis using IBM® SPSS Statistics28.

Results

49 out of 53 (93.45%) healthcare professionals responded to the survey: 71.43% reported increased awareness, and responses were almost equally divided between those who initiated projects (46.94%) and those who did not (53.06%). Most participants (93.88%) did not find the WDAD 2023 one-day point prevalence study in March burdensome, and all expressed interest in future participation. The WDAD 2023 one-day point prevalence study highlighted diverse projects, primarily focused on delirium awareness and education. The survey found suggestions for future improvements emphasizing more efficient, digital, and engaging research methods and a clear need for educational resources, particularly in ICU delirium.

Conclusions

Our survey finds that participation in WDAD 2023 one-day point prevalence study boosted delirium visibility, leading to ongoing awareness, interest in future studies, and practice changes that benefit patients and the healthcare system. Further evidence-based research is needed to assess the impact of these campaigns on delirium recognition and management.

INTRODUCTION

Delirium is a common and transient neurological syndrome characterized by fluctuating disturbances in cognition and awareness, typically triggered by an underlying medical condition or its treatment.[1] While it can stem from a single cause, it is often multifactorial, resulting from a combination of predisposing and precipitating factors[2-4] where a higher burden of the former lowers the threshold for the latter. Clinically, symptoms like confusion may be the first sign, frequently linked to infections or medication changes.[4,5] Delirium affects diverse populations, occurring in up to 23% of older patients in clinical wards, 25% post-stroke, 32% in ICUs, 70% of those on mechanical ventilation, 88% in palliative care, and about 34% of children admitted to Pediatric Intensive Care Units.[6-8]

Delirium detection has been possible in recent years thanks to the development of reliable and valid screening tools used at the bedside in different populations.[9,10] Consequently, management has also evolved, bringing multifactorial approaches, such as the HELP program (The Hospital Elder Life Program) for older patients in wards[11] and the ABCDEF bundle for adult and pediatric patients in ICU.[12,13] Unfortunately, delirium is often still unrecognized[14,15] even though it is associated with an elevated care complexity and poor outcomes across different clinical environments and frequently results in an extended duration of hospitalization, impaired rehabilitation, decline in cognition and functional abilities with consequent institutionalization, augmented healthcare costs, and an increased mortality rate.[14,16,17] Increasing awareness of delirium has been the central goal of several societies and guidelines for many years, e.g. the National Institute for Health and Clinical Excellence's (NICE) guideline "Think Delirium", first published in 2010.[18]

Established in 2015, the International Federation of Delirium Societies (iDelirium) aims to play a crucial role in harmonizing the message of delirium globally by organizing the efforts of professional delirium societies worldwide. It acts as a cohesive advocate for delirium societies, boasting representatives from the American Delirium Society (ADS), Australasian Delirium Association, and European Delirium Association (EDA). Additionally, iDelirium functions as the designated planning committee for World Delirium Awareness Day (WDAD), held annually since 2017. iDelirium aims to enhance awareness and comprehension of delirium among the general population, healthcare practitioners, and policymakers worldwide. It strives to foster early detection and proper management of delirium across all healthcare environments, advocating for those impacted by delirium and their families. Additionally, the iDelirium network seeks to endorse and encourage research that enhances our insight into delirium, refining prevention, diagnosis, and treatment approaches. Through the pursuit of these objectives, iDelirium aspires to enhance the well-being of individuals affected by delirium and their families while lessening the societal impact of this condition.[19]

Despite advances in delirium management in recent decades, many barriers for health professionals in screening and identifying delirium are still reported. This is mainly due to the challenges of healthcare professionals' knowledge, understanding and communication; difficulties in the use of screening tools; organizational constraints; cultural barriers; clinical workload; interprofessional working, and confounders (such as dementia or unknown cognitive baseline, delirium motoric subtypes and risk factors, the fluctuating nature of delirium).[20,21] Moreover, the healthcare system has faced unprecedented strain during the COVID-19 pandemic, impacting evidence-based approaches to delirium management.[22-24] Delirium control measures have been challenging to implement compared to earlier periods, potentially leading to setbacks in the progress achieved in its prevention and treatment as events such as a pandemic can place significant pressures on the healthcare system, diverting resources and attention from areas such as delirium prevention and control.[25,26] Therefore, there is a renewed call for heightened awareness and proactive measures in addressing delirium management needs, including recognition of delirium as a priority, education and training, implementation of guidelines and protocols, an interdisciplinary approach, research promotion, patient and caregiver education, advocacy for policy changes, and barriers assessment.[27] Additionally, there is an increasing and urgent need to address these needs in understudied settings such as long-term care and home care.

During the worldwide one-day point prevalence study on World Delirium Awareness Day (WDAD), on March 15th, 2023, clinicians from 44 countries and over 1,600 wards/units collected data of more than 36,000 patients, with one-fifth delirious.[28] By performing this study, a global research network was founded through the cooperation of highly motivated collaborators and clinicians. After the data collection, we asked national collaborators from these 44 countries about their experiences and whether conducting the study induced any effects, such as increased awareness of delirium.

The present study aimed to ascertain, from national collaborators and involved clinicians from 44 countries, the perceived effects of performing a one-day point prevalence of delirium on WDAD 2023 around the world. Secondly, to evaluate the WDAD 2023 one-day point prevalence study from their perspective and gain insight to guide future activities.

METHODS

This was an online survey with national collaborators and clinicians from 44 countries who participated in the WDAD one-day point prevalence study in 2023, which was also in survey format. The survey was distributed throughout the WDAD Research Network with a snowball system, wherein recipients were asked to pass it on to others, using SurveyMonkey® (San Mateo, CA, USA).

DESIGN AND SETTINGS

Researchers from 44 countries contributed to data collection for the WDAD 2023 one-day point prevalence study on

delirium. This cohort comprised national coordinators from each participating country, as well as clinicians who collaborated with them in the implementation and execution of the study protocol. The survey population consisted of all national collaborators and clinicians from 44 countries who participated in the WDAD 2023 one-day global point prevalence study. In other words, the survey was distributed exclusively to individuals directly involved in the implementation of the WDAD 2023 one-day global point prevalence study, with the goal of collecting their feedback on the research process and its perceived impact. Healthcare professionals from these 44 countries were from hospitals, rehab facilities, and nursing homes. The wards/units included general wards, ICUs including pediatric and adults, weaning units, rehabilitation wards, and others.

SURVEY DEVELOPMENT AND DATA COLLECTION

The author group created the online survey. The survey was designed in accordance with the guidelines for conducting online surveys.[29]

PHASE 1 - PREPARATION AND SURVEY DEVELOPMENT

The survey was prepared in an iterative process among delirium experts, balancing time taken to complete the survey, information depth, and feasibility for working clinicians. Consequently, we developed six core questions, four with closed and two with open answers. The closed questions asked about increasing awareness of delirium as an effect of the WDAD one-day point prevalence study, awareness-raising projects during WDAD, the burden of performing the WDAD one-day point prevalence study, and potential interest in future studies; each question could be answered by yes, no, or other (specify). The two open questions asked for suggestions on improving the WDAD one-day point prevalence study and ideas for activities during the next WDAD on March 13th, 2024. The survey was pretested by four clinicians and its language was English.

The questions were: 1) Did the WDAD 2023 survey help to raise awareness in your hospital unit?; 2) Have you started any projects to improve delirium assessment or intervention on your unit since the WDAD 2023 survey?; 3) Did you find the survey burdensome to complete?; 4) Would you be interested in completing future WDAD surveys?; 5) How can we improve future surveys?; 6) On the next World Delirium Awareness Day on March 13th, 2024, we are planning delirium awareness projects around the globe, such as distributing educational posters, posts on Social Media, and others. Do you have any suggestions for sharing ideas for next year's activities?

The complete survey is available in **Supplement 1**.

PHASE 2 - SURVEY DISTRIBUTION

A survey link was sent to all national collaborators and participating clinicians from 44 countries, requesting to share it further using a snowball sampling method. As a result, it is not possible to calculate an exact response rate.

PHASE 3 - SURVEY ADMINISTRATION

The survey was administered using the online tool SurveyMonkey®. Participants were informed about the anonymous survey and gave consent by participation.

There were no mandatory survey items, and no incentives offered. The estimated duration for completing the survey was 3 minutes (information by SurveyMonkey®). The survey was open for four weeks from September 9th until October 9th, 2023.

PHASE 4 - SURVEY DATA ENTRY AND CHECKS

Two researchers (REVC and TAS) independently analyzed all content, with conflicts resolved through discussion with a third researcher (PN).

All data entry was performed online using SurveyMonkey® and stored using an Excel® (Microsoft Corporation, USA) spreadsheet, version 2023.

ETHICAL APPROVAL

The online survey concurred with the declaration of Helsinki and Good Clinical Practice. Initially, participants in the global one-day point prevalence study of WDAD signed an informed consent form to conduct data collection in their respective units, respecting the ethics committees of their country. The proposing unit is the University of Kiel, Germany. Thus, participants had already authorized their participation in the research. However, to participate in the post-WDAD study survey, all responses were collected anonymously, and participants provided informed consent by actively selecting a tick box before beginning the online survey. Thus, no ethical approval was required.

ANALYSES

Quantitative data underwent statistical analysis using IBM® SPSS Statistics28, with nominal data presented as absolute and relative values (number and percentage). Qualitative content analysis was used to analyze responses in comment boxes. Initially, the data was imported into Word, where each entry was carefully reviewed and grouped into similar summary categories based on recurring patterns or topics. These categories were then cross-checked to ensure consistency and relevance. Following this, the categories were further refined and consolidated into broader, overarching key themes that captured the core insights of the participants' responses. This process aimed to ensure that the themes accurately represented the range of perspectives expressed in the data while maintaining the depth and richness of the qualitative information. All researchers involved are experienced in qualitative data analysis.

RESULTS

THE SURVEY IN NUMBERS

A total of 49 healthcare professionals responded to the survey. Most respondents (35/49 = 71.4%) indicated an in-

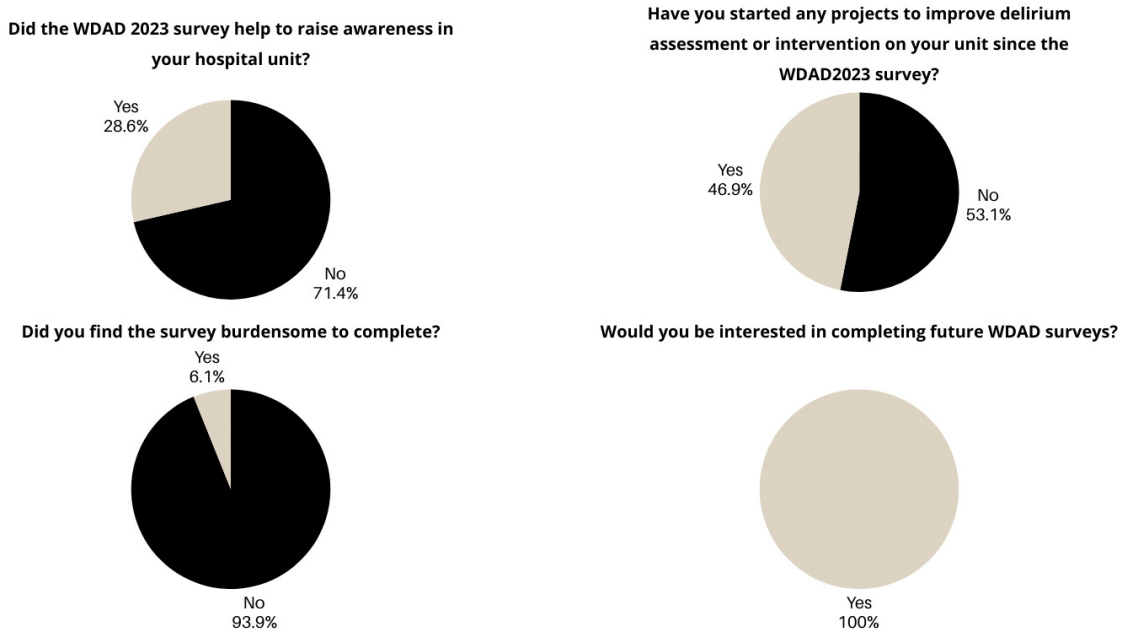

Figure 1. Summary of WDAD survey evaluation: n= 49

creased awareness in the hospital unit after completing the original 2023 survey. A near-equal division was observed between those who initiated projects (23/49 = 46.9%) and those who did not (26/49 = 53.1%). Most participants did not perceive the survey as burdensome (46/49 = 93.9%). A strong interest was expressed in future engagement with similar initiatives: all respondents who answered this question (49/49 = 100%) indicated interest in future participation - **Figure 1**.

THE PERCEIVED IMPACT OF CONDUCTING A 1-DAY GLOBAL POINT PREVALENCE STUDY OF DELIRIUM ON WDAD 2023

The study revealed that respondents communicated diverse projects, emphasizing raising awareness and educating about delirium. Despite some concerns regarding the WDAD one-day point prevalence study's burden, particularly its duration and the time required to locate relevant information, most participants did not find it overly burdensome. Proposals for future improvements highlighted a preference for more efficient, digital, and engaging survey formats, including a focus on capturing patients' experiences. Additionally, there was an apparent demand for educational resources, especially in intensive care unit (ICU) care and delirium management, underscoring the need for continued support in these areas - **Figure 2**.

DISCUSSION

The present study highlights how important data collection is in assessing the point prevalence of one-day delirium, combined with the WDAD 2023 delirium awareness campaigns, for raising awareness of the condition in daily hospital routines. Unfortunately, despite being frequent, delirium is still largely underdiagnosed in practice, especially in intensive care and geriatric settings. The results of our study pointed to a prominent role for the global WDAD initiative in expanding the understanding of delirium among healthcare professionals in the units participating in the study.

The decision to conduct a 1-day global point prevalence study on WDAD was strategically motivated by scientific and educational objectives. Concentrating data collection on a single, internationally coordinated day allowed for the simultaneous engagement of healthcare teams worldwide, thereby enhancing the visibility of delirium and reinforcing the importance of its recognition in routine clinical practice. This approach fostered awareness, encouraged validated screening tools, and promoted reflection on local practices. Moreover, the initiative enabled the collection of comparable data across diverse settings, supporting quality improvement, benchmarking, and the identification of gaps in delirium detection and management. As such, the 1-day point prevalence design aligned with the overarching goals of WDAD by combining data-driven insight with advocacy for better delirium care.

Awareness campaigns aim to spread the word about a diagnosis or disease, to raise awareness and to disseminate knowledge about a specific condition.[30] A few months before WDAD, iDelirium researchers met with increasing frequency as the day approached to outline campaign strategies that could be disseminated globally to standardize the campaign focus. In general, campaigns promote training, lectures, and discussions emphasizing the importance of early diagnosis of delirium and its appropriate management. Furthermore, they allow healthcare professionals to share experiences and learnings, creating a culture of

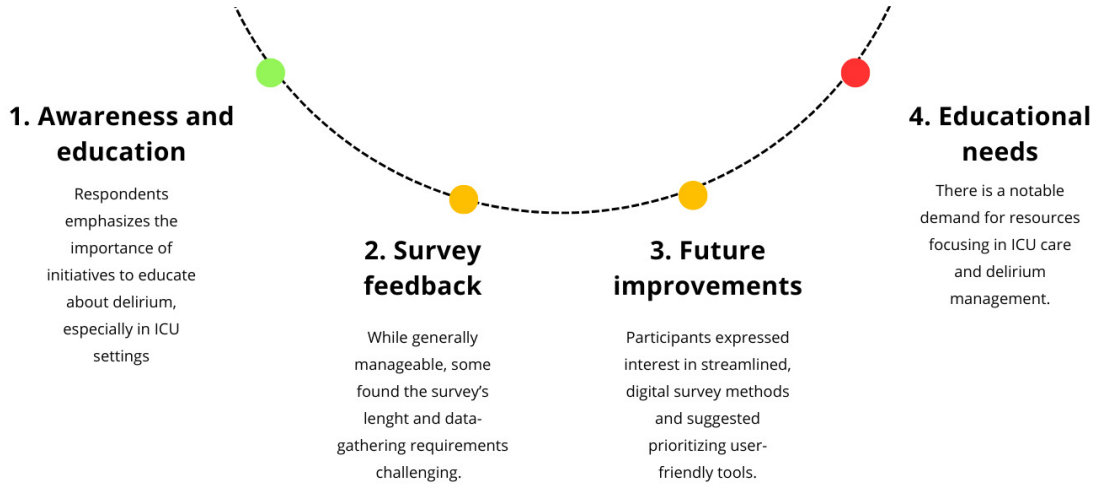

Figure 2. The perceived impact of conducting a 1-day global point prevalence study of delirium on WDAD 2023

awareness beyond the day dedicated to the topic. In addition, iDelirium has standardized X, resp. Twitter as the social network of choice for publishing content about campaigns carried out around the world. To this end, the hashtag #WDAD is used to compile publications. However, other social networks such as Facebook, Instagram, and LinkedIn are often used as articles in the press. Finally, through YouTube, interested parties can access several videos on various topics related to delirium through the link https://www.youtube.com/@ideliriumwdad1576 It is also interesting to comment on some fun activities that have been carried out over the years and promoted by iDelirium, such as the pass of the Delirium Awareness flag in different hospitals around the world, the competition for the best infographic and the title of "delirium superhero" for those most engaged in the campaign, as we can see in the Delirium Day website https://www.deliriumday.com/

The celebration of World Awareness Days results from the need to draw the attention of the scientific community and the general population to the topic of delirium detection, prevention, and management and press authorities and governments to adopt measures to address these issues.[30] The dissemination of campaigns to raise awareness of health problems indicates that they dominate in combating these conditions. Creating such actions can be more or less straightforward and provide an easily accessible and tangible way to spread knowledge about certain diseases.[31] A systematic review demonstrated that health awareness campaigns are crucial in public health due to their role in primary and primordial prevention and the early treatment and management of various health problems—initiatives such as these help to increase community knowledge about diseases and their risk factors.[32]

Recently, a Quality Improvement Project (QIP) aimed to increase awareness of delirium among relatives of patients in seven geriatric wards at Cambridge University Hospital. Through interventions such as QR code information posters and awareness campaigns for healthcare professionals, the study recorded significant increases in relatives' awareness, understanding, and interest in delirium and a 132% increase in views of the Trust's information website. The project demonstrated the effectiveness of QR codes and highlighted the importance of a multi-faceted approach to providing clear and accessible information.[33]

Data collection at WDAD one-day point prevalence study in 2023 has already shown concrete evidence of using delirium management protocols. Nydahl *et al.* evaluated the use of validated tools for delirium assessment and the existence of management protocols in different units, such as rehabilitation centers and hospitals. The researchers analyzed data from 44 countries, totaling 36,048 patients in 1,664 wards/units. They described that 66.7% of the units applied validated delirium assessment methods, and 66.8% had protocols, although these varied significantly between continents. Notably, units with protocols were more likely to use validated tests (odds ratio 6.97). These outcomes indicate that the application of protocols increases the likelihood of valid clinical assessments and, consequently, the indication of evidence-based interventions.[34] In the case of the United States, Lindroth et al. observed deficiencies in delirium management in settings affected by the COVID-19 pandemic. In contrast, some hospitals took the opportunity to review and expand their delirium protocols beyond the scope of intensive care, sharing experiences between teams to identify areas for future improvement.[28]

A potential limitation of our study is recall bias, as the survey was conducted in September–October 2023 to eval-

uate participants' perceptions of a point prevalence study in March 2023 during World Delirium Awareness Day. Given the time gap between the event and the survey, participants' recollections of the study's impact on delirium awareness in their units may have been influenced by memory decay or subsequent experiences, potentially affecting the accuracy of their responses. However, it is essential to note that many of these units were actively engaged in World Delirium Awareness Day, organizing local events and sharing educational content on platforms such as X, which may have helped reinforce and preserve the memory of their involvement and its perceived impact.

CONCLUSION

By participating in the point prevalence study at WDAD 2023, facilities have increased the visibility of delirium, which has increased interest in future studies and concrete changes in practice. As a result, awareness is not a one-day event but an ongoing process that can be driven by global campaigns, resulting in direct benefits for the patient and the entire healthcare system. Future evidence-based research is needed further to assess the impact of these campaigns on delirium recognition and management.

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