

Share Your Delirium Success Story with Us!

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ABSTRACT

BACKGROUND

Sharing delirium success stories is a social-interactive tool to improve awareness, knowledge, and motivation. A Delirium Success Story is a story about delirium with a successful ending, e.g. a successful implementation project, positive experience in the hospital, new approaches to support, exciting experience, positive support by others, or else.

AIM

To report the main themes, context, number, extend, and professions of shared delirium success stories, collected during a four-week period from World Delirium Awareness Day (WDAD) March 12th, till April 23rd, 2025.

METHOD

Worldwide online survey in several languages, distributed in a snowball system via the network of delirium experts, social media and professional organizations. Participants of interest are health care professionals (nurses, physicians, other), former adult patients and their relatives. Participants are invited to voluntarily share their delirium success story, the categorized context, their profession/role, major success' contributors, and recommendations for clinicians. By participation, they agree to share their story. All personal information will be anonymized by the research team. The stories will be translated into English, evaluated quantitatively by reporting number of stories, words, and others, and analyzed qualitatively by content analysis, using Artificial Intelligence and reporting main themes.

EXPECTED RESULTS

The survey for sharing delirium success stories will identify main themes in experiences success of clinicians, patients, and families in delirium management and experiences. The quantitative results and qualitative findings will improve the knowledge about positive delirium experiences of clinicians, patients, and relatives, and will lead to deeper insights how participants can be motivated. The analyses will lead to specific strategies how delirium management can be improved in practice. And hopefully, the survey will be a success story by itself.

Keywords: delirium, encephalopathy, motivation, learning, survey

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Registration: will be done after approval

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2 Background

Delirium is a clinical syndrome, characterized by cognitive impairments, abrupt beginning, fluctuation, deficits in attention, and other symptoms (American-Psychiatric-Association, 2013). There are diverse causes for delirium such as predisposing causes (high age, cardiovascular diseases, substance abuse) and triggering factors (severe illness, interventions, medications) and others (Maldonado, 2008, Smith and Meyfroidt, 2017, Ormseth et al., 2023). Delirium is a common complication of patients in hospital, affecting one in five patients, with various rates depending on age, severity of illness, and other factors (Lindroth et al., 2024). Presence of delirium increases risks for prolonged stay in hospital, increased mortality, cognitive disturbances, costs, and others (Wilson et al., 2020). From the view of patients and caregiver, it is often a frightening experience, with lasting effects on quality of life and psychosocial health (Kuusisto-Gussmann et al., 2021). Most effective prevention and treatment measures are frequent assessment, education and improvement of communication, identification and treatment of causes, nursing/therapeutically interventions, pharmacological symptom management, and monitoring complications and long-term outcome such as Post Intensive Care Syndrome (Stollings et al., 2021). The best strategy of implementing delirium management is still under research, with time and staff constraints, lacking educational trainings, and missing awareness being important barriers (Trogrlić et al., 2015, Pun et al., 2019, Kamdar et al., 2022, Makhija et al., 2023, van Bochove-Waardenburg et al., 2023)

The worldwide delirium societies including the American Delirium Society, European Delirium Association, and Australian Asian Delirium Society founded in 2017 the World Delirium Awareness Day (WDAD) each year on the second Wednesday in March (Deliriumday, 2023). The aim is to increase the awareness for delirium among clinicians (e.g. for improving delirium screening), patients (e.g. for noticing and explaining symptoms), families (for explaining strange behaviour in loved ones), and the public sector (e.g. to improve financial reimbursement of delirium management). During the last years, on WDAD in March several activities were performed such as a Delirium Café (Roitto et al., 2020), awareness days in hospitals including distribution of information posters about delirium, TV and radio broadcasts (Wieczorek-Stawińska et al., 2024), and delirium prevalence surveys (Bellelli et al., 2016, Nydahl et al., 2024, Lindroth et al., 2024, Byrnes T et al., 2024, Azizi et al., 2024). One intervention, that fits into Health awareness days, but has limited evidence yet, is sharing success stories (Vernon et al., 2021).

Sharing success stories is a social-interactive tool to improve awareness and knowledge. There is no common definition of success stories, but these are short texts reporting a context, a problem and a solution, and can be distributed as text, picture, or short video (Mastervich et al., 2024). Success stories also improve knowledge, motivation, self-confidence, acknowledgement, but also addressing stereotypes and discrimination (Hatzifilalithis et al., 2024, Firzly et al., 2021,

Mastervich et al., 2024). Currently, it is unknown whether success stories can be collected and shared during a World Delirium Awareness Day.

2.1 Aim

To report the main themes, context, number, extend, and professions of shared delirium success stories, collected during a four-week period from World Delirium Awareness Day (WDAD) March 12th, till April 23rd, 2025

3 Methods

Worldwide open online survey in several different languages, distributed in a snowball system via Social Media and professional organizations on next WDAD on March 12th 2025.

Ethic approvals will be sought in the countries of the principal investigators (Germany, Japan, United States). The study will be registered in the German Registry for Clinical Trials. The report of this study is in concordance with the criteria for Checklist for Reporting Results of Internet E-Surveys (CHERRIES) (Eysenbach, 2004).

3.1 Population

Invited for participation will be health care workers, former patients with delirium experiences, and their relatives. The online survey will be distributed via Social Media and professional networks. Hence, it is an open survey and will be publicly available. After entering the website of the survey, participants can choose their preferred language (English, German, Spain, Dutch, Portuguese, French, and more).

Included will be a) clinicians (health care professionals), former adult patients and their relatives, and others; and b) who agree to the conditions of the survey and are legal capable of doing so, c) who answer at least the question for the success story, and d) finish the survey.

Excluded will be participants a) with offending comments, or b) with complaining comments only, or c) other reasons such as: story is not understandable, advertisement for any products, other answers than the intended meaning, or d) without reporting a success story (Spencer et al., 2023).

3.2 Survey

The survey has been developed by the authors, including former patients and different health care professionals such as physicians, nurses, and therapists from

different countries, cultures, and languages. The survey was revised until consensus was found. The survey has been pretested by seven participants of the target group, with minor revisions in wording, and exclusion of children as no being capable of legal consent.

The survey will be performed on SurveyMonkey.com. The link is:

<https://de.surveymonkey.com/r/WDAD2025>

Participants are invited to voluntarily share their delirium success story, the categorized context, and their profession. By participation, they agree to share their story. No cookies or IP-addresses will be stored or evaluated.

Participants will be instructed to use names such as Smith, Miller, or Jones instead of real names. In case participants use personal data, all personal information will be anonymized by the research team.

The survey includes 5 pages and 9 questions. Participants will be informed about the aim and content of the survey, the voluntary approach, the time to complete the survey (estimated as 5 minutes); the timeframe for participation (four weeks, starting at WDAD 2025, end on April 23rd 2025); and that participation expresses their consent with the conditions. Participants could not revise their answers after finishing the survey.

Participants will be informed that it might be useful to prepare & write their success story on the personal device and copy & paste it into the survey; especially in case of an instable internet connection, in reporting more than one success story, or in difficulties with finding the right words, and other reasons.

Participants are free to stop the survey at any time. No IP addresses will be stored. All questions are free to answer (no mandatory information, except consent for participation and consent for data protection). Incentives are not offered.

There will be nine questions. The nine questions are:

<<Page 1>>

“Chose your language on the top right corner”

<<Page 2>>

Information for participants is:

“Delirium is a serious condition, affecting many patients in hospitals or long-term care, and often lasting for a few days. Symptoms are: onset within a few days or hours, fluctuation over the day, difficulties to concentrate, feelings of restlessness and/or apathy, and often sleeping problems, hallucinations, and difficulties to separate between dream and reality.

Your delirium success story: We would like to hear your success story regarding delirium. This can include the successful prevention and treatment

of one or many delirious patients, assistance provided to one or several families, the implementation of delirium management in daily practice, a unique idea for teaching about delirium, or other successes.

Time: *it will take around 5-10 minutes to answer the survey. The survey will end on April 23rd 2025.*

Prepare your story/stories: *it might be useful to prepare & write your success stories on your personal device and copy & paste it into the survey; especially in case of an instable internet connection, in reporting more than one success story, or in difficulties with finding the right words, and other reasons.*

Aim: *We hope to increase public awareness about delirium and promote more energy towards its prevention and treatment.*

Support: *this survey has been ethically reviewed and registered with the WHO. It is supported by delirium societies from Australia/Asia, the USA, Europe, and Germany.*

1. *Information (single option)*
 - I understand (continue)*
 - I do not understand (end of survey)*

<<Page 3>>

Participants consent to the following information

300 words please: *Please share how you addressed delirium, supported someone during delirium, or helped to prevent delirium (i.e., your success) in the past in a maximum of 2,000 letters or around 300 words. We will evaluate the responses and analyze particularly helpful and motivating aspects. We reserve the right to exclude stories and comments with offending content or complaining content only.*

Children & Teenagers: *might also experience delirium, but participation requires parent's consent. We encourage adult parents to share the stories of their children, e.g. "My 6-year-old daughter had delirium, and we..."*

No identifying information: *please ensure you do not include any personal names, details, or other identifying information about individuals, locations, or organizations; if necessary, we will delete such information. You may use placeholder names like Smith, Jones, or Miller.*

Data protection: *This survey follows the current European Data Protection Regulation. Please visit the data protection disclaimer of Survey Monkey <https://www.surveymonkey.de/mp/legal/privacy/>. Your answers will be*

analyzed with the support of Artificial Intelligence (MAXQDA with AI Assisst), and exported to servers within the European Union. Please visit the data protection disclaimer of MAXQDA: https://www.maxqda.com/wp/wp-content/uploads/sites/1/VERBI_Datenschutzerklaerung_Software_DE.pdf Your answers will be stored on servers of SurveyMonkey and MAXQDA for six months after closing the survey. Since we are asking only for your country and your profession/role (health care worker, former patient, relative, other), this survey is anonymous.

Publication of your story: *I agree that my answers may be published in whole or in part by the initiators of the survey in all printed medical works or in all electronic media. This includes publications including - but not limited to - in medical journals and books, scientific lectures, as well as their publication on the Internet and in social networks with the aim of increasing awareness for delirium. I will not receive any (expense-)compensation for my consent and the resulting publications.*

This consent is valid for an unlimited period of time and territory. However, I can revoke my consent at any time for the future. The revocation must be sent to info@wdad-study.center. The revocation has no influence on publications already made and I agree that the media already created until receipt of the revocation will be used up. In the case of publication in social networks and on the Internet, the quotes will be deleted after receipt of the revocation, whereby complete deletion cannot be completely guaranteed for technical reasons. As the survey is anonymous and we cannot identify your contributions with your name, in the event of a revocation you would have to provide us with the full story and the time of your participation in the survey as proof of your authorship.

2. *By participating, you declare that you have full legal capacity to decide whether to participate and you agree to these terms. (single option)*
 - I agree (continue)
 - I do not agree (end of survey)

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3. *In what country do you live? (single option)*
 - Drop down menu with all countries worldwide
4. *What is your profession/role? (single option)*
 - Physician/Doctor
 - Nurse
 - Allied Health Care Professional (Therapists)
 - Other Medical Professional
 - Former Patient

- Relative, Family
 - Other
5. In your delirium success story, delirium has been diagnosed by a medical professional?
- Yes
 - No
 - I am not sure
 - Not applicable

6. Open question: *share your delirium success story*

Information:

“Please share your personal delirium success story. Think - How or what did you do today, or in the past, to identify, prevent, or manage delirium? If you are a former patient, consider what helped you during your hospital stay to cope with delirium. If you are a family member/friend, think about actions that you took that seemed to help the patient during their delirium. Have multiple stories to share? Great! Please submit one story per survey, it is okay if you submit multiple surveys.

Please limit to 2,000 letters, which is equal to around 300 words.

Do not include information that identifies individuals, locations, or companies/healthcare facilities; you may use the names Smith, Jones, Miller for healthcare workers, patients, families, or just “in the city where I am living”, or “the hospital”. In case there are identifiable information of persons/institutions, we reserve the right to delete this information. We reserve the right to exclude stories and comments with offending content or complaining content only”.

- (Open text field with limitation to 2,000 letters)

7. *My story best fits best into the following category ...* (multiple options)

- Helping patients
- Helping families or friends of patient
- Implementing or adopting delirium care to clinical practice
- Teaching about delirium
- A mix of everything
- Other

8. Open question: *Can you write in one or a few words, what was the biggest contributor to the success?*

- (Open text field with limitation to 100 letters)

9. Recommendation

Open question: *Do you have a recommendation for Health Care Professionals?*

- (Open text field with limitation to 2,000 letters)

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Information:

“Thank you! If you want to report another success story, you can enter the survey again.

You have helped us a lot. Your success story helps us to raise awareness about delirium and motivates other healthcare workers to contribute!”

<<End of Survey>>

The survey will be pretested with a sample, representing the target group.

3.3 Data analysis

Data will be analyzed in a quantitative and qualitative manner.

3.4 Quantitative data

We will report survey performance data:

- Completeness rate: all participants finishing the survey, divided by starting the survey
- Duration: duration time (mean and standard deviation (SD), or median (Interquartil Range (IQR), depending on distribution)

Success story data:

Stories will be translated into English by national coordinators (at least two persons, and an assistant), using DeepL and following quality control by evaluating the translation and if necessary, adapting the stories. We will report

- Number of stories, contributors, and recommendations
- Number of excluded stories, contributors, and recommendations and reasons (offending or complaining content, other reasons such as: not understandable, advertisement for any products, other answers than the intended meaning)
- Number of de-identified personal data of persons or institutions
- Number of letters and words in total and in mean (standard deviation)/median (Interquartil range).
- Number of main themes and sub-themes (see below)

3.5 Qualitative analysis

The stories will be evaluated by content analysis, using Artificial Intelligence (AI). Content analysis will be performed by the method of Mayring, each story will be analyzed for themes using the likely key words of participants, compared with other stories to identify general themes (Mayring, 2015).

Dealing with different languages

The stories will be shared in different languages, leading to challenges in analysis (Squires, 2009). Hence, we developed a strategy to ensure a transparent process of translation and analysis (Abfalter et al., 2021, Behr, 2015):

1. Stories in a language other than English will be exported to Excel.
2. The stories will be reviewed by at least two native researchers, who are fluent in English
3. A first content analysis will be done in the original language by the researchers; each theme will be cross-checked with the answers in “the biggest contributor” question.
4. First notes for stories will be made with
 - a. suspicious meaning
 - b. with meaningless, unclear phrases, missing words/phrases
 - c. phrases with culture-specific references
 - d. difficult-to-translate phrases
5. Translation into English will be made, using DeepL. Each translation will be reviewed by at least two native speakers. Results will be compared until consensus will be found.
6. Phrases, noted in (4) will be checked and revised if necessary, until consensus will be found
7. Translations of different languages into English will be integrated into one Excel file, and cultural and difficult-to-translate wording will be discussed within the group of researchers.
8. If stories and themes express severe cultural difference and cannot be integrated into the whole group of stories, these will be analyzed and reported separately.
9. A content analysis using MAXQDA will be performed, generating main themes (see below).

To manage a likely large number of stories, contributors, and recommendations, Artificial Intelligence (AI) will be used for inductive content analysis. AI has been successfully used for content analysis of large texts such as audio transcripts or social media messages (Saini et al., 2023, Lau et al., 2024). AI has the power to identify main codes in texts, compared to traditional coding by human researchers (Morgan, 2023). We will use MAXQDA with AI Assist which allow automatic coding by AI.

To enhance trustworthiness, we will select randomly 10 stories and analyze these by our own, identifying themes and main themes; we will use these 10 stories and run the AI analysis as a pre-test. We will adapt the AI analysis until the analysis is trustworthy compared to human researchers.

We will perform sub-analysis for all open questions, and compare

- Themes by type of participants,
- Themes by confirmed delirium yes/no/not sure for former patients and families,

- Themes by type of context.

If there will be major differences in themes with vs without confirmed delirium, we will include only answers of patients & families with confirmed delirium, as answered by participants.

If feasible, we will create figures displaying the interaction of different themes.

4 Expected Results and Findings

The survey for sharing delirium success stories will identify main themes in experiences success of clinicians, patients, and families in delirium management and experiences. The quantitative results and qualitative findings will improve the knowledge about positive delirium experiences of clinicians, patients, and relatives and will lead to deeper insights how participants can be motivated to improve delirium management and awareness. Further analyses about contributors and recommendations will increase the knowledge about delirium experiences in practice from different viewpoints. The analyses will lead to specific strategies how delirium management can be improved in practice. And hopefully, the survey will be a success story by itself.

5 Project schedule

Step/Milestone	Responsible	Month-week number											
		Jul-31	Aug-32	Aug-34	Aug-35	Sep-37	Mar-11	Apr-15	Jun	Jul	Aug
Collect champions	PN	+											
Send out first draft of survey	PN	+											
Perform pretest with 7 clinicians	All	+											
Finalize survey	PN												
Translate survey into different languages	PN, MvB												
Apply for ethic approval	PN, HL,KL, RvH												
Apply for data protection	PN, HL,KL, RvH												
Register in trial registry	PN												
Write call for participation for social media, add figures	MH												
Data collection	PN												
Analysis	PN,?												
Write multiple manuscripts	PN,HL,KB, RvH, all												
Publish	PN												
Celebrate	ALL												

6 Ethic

Since all participants contribute voluntarily, are informed about their possibility to stop the survey at any time and without disadvantages, and no current patients are involved, we assume that the survey has more benefits than disadvantages. The risk of a possible harm is extremely low, and can only be considered in case of unknown PTSD when former patients experience a flashback while writing about their positive experiences; contrary, they can stop the writing at any time and the risk appears to be very low.

To enhance participation and acceptance in future publications, the four PI will seek ethic approval in their countries. National coordinators will consult their local Institutional Review Board for necessity of an ethic approval and if required, submit one.

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Supplement

Title

Authors

Content

Survey

Table E1: Checklist for Reporting Results of Internet E-Surveys

Survey

Language

Select your language in the top right corner and continue

Welcome to the WDAD Survey 2025

Information

* 1. INFORMATION

DELIRIUM is a serious condition, affecting many patients in hospitals or long-term care, and often lasting for a few days. Symptoms are: onset within a few days or hours, fluctuation over the day, difficulties to concentrate, feelings of restlessness and/or apathy, and often sleeping problems, hallucinations, and difficulties to separate between dream and reality.

YOUR DELIRIUM SUCCESS STORY: We would like to hear your success story regarding delirium. This can include the successful prevention and treatment of one or many delirious patients, assistance provided to one or several families, the implementation of delirium management in daily practice, a unique idea for teaching about delirium, or other successes.

PREPARE YOUR STORY/STORIES: it might be useful to prepare & write your success stories on your personal device and copy & paste it into the survey; especially in case of an instable internet connection, in reporting more than one success story, or in difficulties with finding the right words, and other reasons.

TIME: it will take around 5-10 minutes to answer the survey. The survey will end on April 23rd 2025.

AIM: We hope to increase public awareness about delirium and promote more energy towards its prevention and treatment.

SUPPORT: this survey has been ethically reviewed and registered with the WHO. It is supported by delirium societies from Australia/Asia, the USA, Europe, and Germany.

- I understand (continue)
- I do not understand (end of survey)

Welcome to the WDAD Survey 2025

Consent

* 2. CONSENT

300 WORDS PLEASE: Please share how you addressed delirium, supported someone during delirium, or helped to prevent delirium (i.e., your success) in the past in a maximum of 2,000 letters or around 300 words. We will evaluate the responses and analyze particularly helpful and motivating aspects. We reserve the right to exclude stories and comments with offending content, or complaining content only.

CHILDREN & TEENAGERS: might also experience delirium, but participation requires parent's consent. We encourage adult parents to share the stories of their children, e.g. "My 6-year-old daughter had delirium, and we..."

NO IDENTIFYING INFORMATION: please ensure you do not include any personal names, details, or other identifying information about individuals, locations, or organizations; if necessary, we will delete such information. You may use placeholder names like Smith, Jones, or Miller.

DATA PROTECTION: This survey follows the current European Data Protection Regulation. Please visit the data protection disclaimer of Survey Monkey <https://www.surveymonkey.de/mp/legal/privacy/>. Your answers will be analyzed with the support of Artificial Intelligence (MAXQDA with AI Assisst), and exported to servers within the European Union. Please visit the data protection disclaimer of MAXQDA: https://www.maxqda.com/wp/wp-content/uploads/sites/1/VERBI_Datenschutzerklaerung_Software_DE.pdf
Your answers will be stored on servers of SurveyMonkey and MAXQDA for six months after closing the survey. Since we are asking only for your country and your profession (health care worker, former patient, relative, other), this survey is anonymous.

PUBLICATION OF YOUR STORY: I agree that my answers may be published in whole or in part by the initiators of the survey in all printed medical works or in all electronic media. This includes publications including - but not limited to - in medical journals and books, scientific lectures, as well as their publication on the Internet and in social networks with the aim of increasing awareness for delirium. I will not receive any (expense-)compensation for my consent and the resulting publications.

This consent is valid for an unlimited period of time and territory. However, I can revoke my consent at any time for the future. The revocation must be sent to info@wdad-study.center. The revocation has no influence on publications already made and I agree that the media already created until receipt of the revocation will be used up. In the case of publication in social networks and on the Internet, the quotes will be deleted after receipt of the revocation, whereby complete deletion cannot be completely guaranteed for technical reasons.

As the survey is anonymous and we cannot identify your contributions with your name, in the event of a revocation you would have to provide us with the full story and the time of your participation in the survey as proof of your authorship.

CONSENT: By participating, you declare that you have full legal capacity to decide whether to participate and you agree to these terms.

- I agree (continue)
- I do not agree (end of survey)

Your background

Please report your country and profession

3. In what country do you live?

4. What is your profession?

- Physician/Doctor
- Allied Health Care Professional (Therapists)
- Nurse
- Other Medical Professional
- Former Patient
- Relative, Family
- Other

5. In your delirium success story, delirium has been diagnosed by a medical professional?

- Yes
- No
- I am not sure
- Not applicable

*** 6. Share Your Delirium Success Story**

Please share your personal delirium success story. Think - How or what did you do today, or in the past, to identify, prevent, or manage delirium? If you are a former patient, consider what helped you during your hospital stay to cope with delirium. If you are a family member/friend, think about actions that you took that seemed to help the patient during their delirium. Have multiple stories to share? Great! Please submit one story per survey, it is okay if you submit multiple surveys.

Please limit to 2,000 letters, which is equal to around 300 words.

Do not include information that identifies individuals, locations, or companies/healthcare facilities; you may use the names Smith, Jones, Miller for healthcare workers, patients, families, or just "in the city where I am living", or "the hospital". In case there are identifiable information of persons/institutions, we reserve the right to delete this information. We reserve the right to exclude stories and comments with offending content or complaining content only.

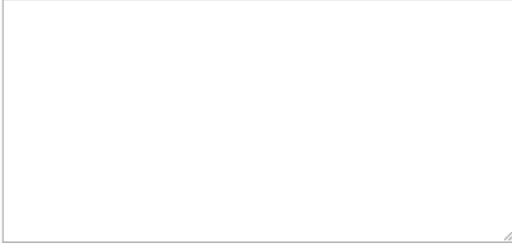
7. My story best fits into the following category ...

- Helping patients
- Helping families or friends of patient
- Implementing or adopting delirium care to clinical practice
- Teaching about delirium
- A mix of everything
- Other

8. Can you write in one or a few words, what was the biggest contributor to the success?

Please limit your answer to 1,00 letters / 20 words

9. Do you have a recommendation for Health Care Professionals? Please limit your answer to 3,000 letters / 300 words

A large, empty rectangular box with a thin black border, intended for the user to write their recommendation. The box is positioned below the question text and occupies a significant portion of the page's width.

Thank you for sharing your success story with us!

Thank you! If you want to report another success story, you can enter the survey again.

You have helped us a lot. Your success story helps us to raise awareness about delirium and motivates other healthcare workers to contribute!

Checklist for Reporting Results of Internet E-Surveys

Table E1: Checklist for Reporting Results of Internet E-Surveys (CHERRIES)

Checklist Item	Description	Reported on page
Describe survey design	Describe target population, sample frame. Is the sample a convenience sample? (In "open" surveys this is most likely.)	7
IRB approval	Mention whether the study has been approved by an IRB.	7
Informed consent	Describe the informed consent process. Where were the participants told the length of time of the survey, which data were stored and where and for how long, who the investigator was, and the purpose of the study?	8
Data protection	If any personal information was collected or stored, describe what mechanisms were used to protect unauthorized access.	n.a.
Development and testing	State how the survey was developed, including whether the usability and technical functionality of the electronic questionnaire had been tested before fielding the questionnaire	7
Open survey versus closed survey	An "open survey" is a survey open for each visitor of a site, while a closed survey is only open to a sample which the investigator knows (password-protected survey).	7
Contact mode	Indicate whether or not the initial contact with the potential participants was made on the Internet. (Investigators may also send out questionnaires by mail and allow for Web-based data entry.)	7
Advertising the survey	How/where was the survey announced or advertised? Some examples are offline media (newspapers), or online (mailing lists – If yes, which ones?) or banner ads (Where were these banner ads posted and what did they look like?). It is important to know the wording of the announcement as it will heavily influence who chooses to participate. Ideally the survey announcement should be published as an appendix.	7
Web/E-mail	State the type of e-survey (eg, one posted on a Web site, or one sent out through e-mail). If it is an e-mail survey, were the responses entered manually into a database, or was there an automatic method for capturing responses?	8
Context	Describe the Web site (for mailing list/newsgroup) in which the survey was posted. What is the Web site about, who is visiting it, what are visitors normally looking for? Discuss to what degree the content of the Web site could pre-select the sample or influence the results. For example, a survey about vaccination on a anti-immunization Web site will have different results from a Web survey conducted on a government Web site	8
Mandatory/voluntary	Was it a mandatory survey to be filled in by every visitor who wanted to enter the Web site, or was it a voluntary survey?	8
Incentives	Were any incentives offered (eg, monetary, prizes, or non-monetary incentives such as an offer to provide the survey results)?	8
Time/Date	In what timeframe were the data collected?	8
Randomization of items or questionnaires	To prevent biases items can be randomized or alternated	n.a.

Adaptive questioning	Use adaptive questioning (certain items, or only conditionally displayed based on responses to other items) to reduce number and complexity of the questions.	n.a.
Number of Items	What was the number of questionnaire items per page? The number of items is an important factor for the completion rate	8
Number of screens (pages)	Over how many pages was the questionnaire distributed? The number of items is an important factor for the completion rate.	8
Completeness check	It is technically possible to do consistency or completeness checks before the questionnaire is submitted. Was this done, and if “yes”, how (usually JAVAScript)? An alternative is to check for completeness after the questionnaire has been submitted (and highlight mandatory items). If this has been done, it should be reported. All items should provide a non-response option such as “not applicable” or “rather not say”, and selection of one response option should be enforced.	n.a.
Review step	State whether respondents were able to review and change their answers (eg, through a Back button or a Review step which displays a summary of the responses and asks the respondents if they are correct).	8
Unique site visitor	If you provide view rates or participation rates, you need to define how you determined a unique visitor. There are different techniques available, based on IP addresses or cookies or both.	n.a.
View rate (Ratio of unique survey visitors/unique site visitors)	Requires counting unique visitors to the first page of the survey, divided by the number of unique site visitors (not page views!). It is not unusual to have view rates of less than 0.1 % if the survey is voluntary.	n.a.
Participation rate (Ratio of unique visitors who agreed to participate/unique first survey page visitors)	Count the unique number of people who filled in the first survey page (or agreed to participate, for example by checking a checkbox), divided by visitors who visit the first page of the survey (or the informed consents page, if present). This can also be called “recruitment” rate.	11
Completion rate (Ratio of users who finished the survey/users who agreed to participate)	The number of people submitting the last questionnaire page, divided by the number of people who agreed to participate (or submitted the first survey page). This is only relevant if there is a separate “informed consent” page or if the survey goes over several pages. This is a measure for attrition. Note that “completion” can involve leaving questionnaire items blank. This is not a measure for how completely questionnaires were filled in. (If you need a measure for this, use the word “completeness rate”.)	11
Cookies used	Indicate whether cookies were used to assign a unique user identifier to each client computer. If so, mention the page on which the cookie was set and read, and how long the cookie was valid. Were duplicate entries avoided by preventing users access to the survey twice; or were duplicate database entries having the same user ID eliminated before analysis? In the latter case, which entries were kept for analysis (eg, the first entry or the most recent)?	8
IP check	Indicate whether the IP address of the client computer was used to identify potential duplicate entries from the same user. If so, mention the period of time for which no two entries from	8

	the same IP address were allowed (eg, 24 hours). Were duplicate entries avoided by preventing users with the same IP address access to the survey twice; or were duplicate database entries having the same IP address within a given period of time eliminated before analysis? If the latter, which entries were kept for analysis (eg, the first entry or the most recent)?	
Log file analysis	Indicate whether other techniques to analyze the log file for identification of multiple entries were used. If so, please describe	8
Registration	In "closed" (non-open) surveys, users need to login first and it is easier to prevent duplicate entries from the same user. Describe how this was done. For example, was the survey never displayed a second time once the user had filled it in, or was the username stored together with the survey results and later eliminated? If the latter, which entries were kept for analysis (eg, the first entry or the most recent)?	8
Handling of incomplete questionnaires	Were only completed questionnaires analyzed? Were questionnaires which terminated early (where, for example, users did not go through all questionnaire pages) also analyzed?	7
Questionnaires submitted with an atypical timestamp	Some investigators may measure the time people needed to fill in a questionnaire and exclude questionnaires that were submitted too soon. Specify the timeframe that was used as a cut-off point, and describe how this point was determined.	11
Statistical correction	Indicate whether any methods such as weighting of items or propensity scores have been used to adjust for the non-representative sample; if so, please describe the methods.	11

n/a not applicable

Reference E1: Eysenbach G. Improving the quality of Web surveys: the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). J Med Internet Res 2004;6(3):e34.