Table 1. Search and strategic characteristics of task execution for tasks 1-4.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Partici-****pant** | **Task 1a** | **Task 2b** | **Task 3c** | **Task 4d** |
| **Starting Point of the search query** | P1 | google.com | participant skipped this tasks | participant skipped this tasks | participant skipped this tasks |
| P2 | google.com | google.com | google.com | google.com |
| P3 | google.com | google.com | google.com | google.com |
| P4 | google.com | google.com | google.com | google.com |
| P5 | google.com | google.com | participant skipped the last task  | google.com |
| P6 | google.com | google.com | google.com | participant skipped this task |
| P7 | google.com | participant skipped this task | google.com | google.com |
| P8 | google.com | google.com | participant skipped this tasks due to time problems | participant skipped this tasks due to time problems |
| P9 | google.com | google.com | google.com | google.com |
| P10 | google.com | google.com | google.com | google.de/maps |
| P11 | google.com | google.com | google.com | google.com |
| P12 | google.com | participant skipped this task | google.com | google.com |
| P13 | google.com | google.com | google.com | google.com |
| P14 | google.com | google.com | google.com | google.com |
| P15 | google.com | google.com | google.com | google.com |
| P16 | participant did not use the internet to answer this task | google.com | google.com | google.com |
| P17 | google.com | particiapant did not use new search terms, as he did not close the browser | google.com | google.com |
| P18 | google.com | participant did no use a search query. The participant simply reopened the webpages that he had opened for the previous task via the browsing history (2.; 4. ) | google.com | google.com |
| P19 | google.com | google.com | google.com | google.com |
| P20 | google.com | google.com | google.com | google.com |
| P21 | participant stopped after two tasks. | participant stopped after two tasks. | google.com | participant stopped after two tasks. |
| **Opened/se lected website** | P1 | krebsgesellschaft.de  | participant skipped this tasks | participant skipped this tasks | participant skipped this tasks |
| P2 | deutsche-fatigue-gesellschaft.de | netdoktor.de ;ndr.de/ratgeber; deutsche-fatigue-gesellschaft.de | Maps Listings (2. Hit) | Netdoktor.de ; Doktorweigel.de |
| P3 | uke.de | deutsche-fatigue-gesellschaft.de |  Maps Listings (2. Hit);pph-hh.de | netdoktor.de |
| P4 | krebsgesellschaft.de | krebsgesellschaft.de | krebsinformationsdienst.de | biokrebs.de |
| P5 | krebsgesellschaft.de | bibliomed-pflege.de | skipped the last task | krebsgesellschaft.de |
| P6 | gesundheitswissen.de | netdoktor.de; netdoktor (for a second time) | informationsvine (google ads) | Participant skipped this task |
| P7 | krebsinformationsdienst.de; krebsgesellschaft.de | participant skipped this task | krebs-selbsthilfegruppe.de | tumorzentrum-muenchen.de |
| P8 | apotheken-umschau.de | krebsinformationsdienst.de | Participant skipped this tasks due to time issues | Participant skipped this tasks due to time issues |
| P9 | krebsinformationsdienst.de; zapmeta.de (google ad);apothekenumschau.de | krebsgesellschaft.de | krebsinformationsdienst.de;careacross.com (google ad); ugb.de; roche.de; after adjustment: kensaq.com (googe ad) | netdoktor.de |
| P10 | shop.krebsliga.ch; netdoktor.de | fatigue.info; bibiliomed-pflege.de | elbkliniken.de  | info-blasenkrebs.de (google ad) ; forum-blasenkrebs.net |
| P11 | zm-online.de; krebsinformationsdienst.de | deutsche-fatigue-gesellschaft.de | tabea-fachklinik.de | urologie.missionklink.de |
| P12 | krebsgesellschaft.de | participant skipped this task | ugb.de | [krebsgesellschaft.de](http://www.krebsgesellschaft.de); krebsgesellschaft.de |
| P13 | [krebsinformationsdienst.de](http://www.krebsinformationsdienst.de);krebsinformationsdienst.de | www.netdoktor.de | krebshamburg.de | krebsratgeber.de |
| P14 | participant skipped this task | [krebsgesellschaft.de](http://www.krebsgesellschaft.de); deutsche-fatigue-gesellschaft.de | Participant skipped this task (with the described symptom „ I would go to my general practitioner“)  | haema-cbf.charite.de |
| P15 | krebshilfe-wien.at | msd-gesundheit.de; netdoktor.de | sanego.de | roche.de |
| P16 | the participant did not open a website. He/She knew the term “Fatigue”which was the answer to the task | Netdoktor.de | therapie.de | krebsinformationsdienst.de |
| P17 | krebsinformationsdienst.de, krebsgesellschaft.de | krebsinformationsdienst.de; deutsche-fatigue-gesellschaft.de | michaelasimon.de; andreasvenus.de | wikipedia.de; uni-ulm.de, springer-medizin.de; klinikum.uni-heidelberg.de  |
| P18 | google.scholar.com; krebsinformationsdienst.de; shop.krebsliga.ch; apothekenumschau.de | Participant did no use a new search query. He/She reopened the webpages that he had opened for the previous task via the browsing history | google.maps.com | krebsinformationsdienst.de; krebsgesellschaft.de; onkologie.hexal.de; leukemia-Hilfe.de |
| P19 | krebsgesellschaft.de  | deutsche.fatigue-gesellschaft.de | uke.de | viomedo.de, board.netdoktor.de; team- andro.de; krebsinformationsdienst.de |
| P20 | krebsgesellschaft.de | deutsche.fatigue-gesellschaft.de | uke.de | frauenmedizin-schaefflerhof.de |
| P21 | Participant stopped after two tasks. | Participant stopped after two tasks. | krebsinformationsdienst.de | Participant stopped after two tasks. |
| **Search terms per search query (Number of websites opened per search query)** | P1 | Antriebslosigkeit, körperliche und seelische Erschöpfung; anhaltende Müdigkeit bei Krebserkrankung (1 website opened) | participant skipped this tasks | participant did not complete this task | participant did not complete this task |
| P2 |  Müdigkeit während einer Krebsbehandlung (1 website opened) | Fatigue Syndrom Behandlung (0 websites opened) | Psychoonkologen in Hamburg- Lokstedt (1 website opened) | Wie wird ein Abszess nach Brustkrebs behandelt (2 websites opened) |
| P3 | psychische Behandlung nach Krebsdiagnose (0 websites opened) | Fatigue (1 website opened) | pysoonkolische in 22529 (0 search results) | Prostatakrebs (1 websites opened) |
| P4 | erschöpfung während krebsbehandlung (1 website opened) | fatigue bei Krebs (1 website opend) | psychoonkologische Beratung 10 km (1 website opened) | nebenwirkung tamoxifen (0 websites opened) |
| P5 | erschöpfung krebserkrankung (1 website opened)  | hilfe bei fatigue (1 websites opened) | Skipped the last task | leben mit brustkrebs (1 website opened) |
| P6 | wie kann ich meine Wohlbefinden nach der op. Erreichen (1 website opened) | fatigue syndrom (2 websites opened)  | Such nach psychologiche Beratung nach Krebs op (1 wensite opened) | Participant skipped this task |
| P7 | Antriebslosigkeit, körperliche und seelische Erschöpfung (0 wesbites opened) | participant skipped this task | psychoonkologische Beratung in 22529 Hamburg (1 website opened) | Ernährung Krebs (1 website opened) |
| P8 | S3 Patientenrichtlinie (0 websites opend) | was tun gegen fatigue (1 website opened) | Participant skipped this tasks due to time issues | Participant skipped this tasks due to time issues |
| P9 | Nebenwirkung Krebstherapie (1 website opened) | Fatigue (1 website opened) | psychologische Einzeltherapie Lungenkrebs (4 websites opened) | brochialkarzinom (1 website opened) |
| P10 | Krebsbehandlung Auswirkungen auf ihr körperliches und geistiges Wohlbefinden Antriebslosigkeit, körperliche und seelische Erschöpfung; anhaltende Müdigkeit (2 website opened) | Behandlungen oder Methoden, um den Umgang mit chronischer/anhaltender ‚Fatigue (2 websit opened) | psychoonkologische Beratung, Buxtehude (google maps found 0 results and 0 websites opened) | Blasenkrebs forum (1 website opened) |
| P11 | Antriebslosigkeit, körperliche und seelische Erschöpfung; anhaltende Müdigkeit die sich auch durch Schlaf, durch viel Ruhe und Schonung nicht bessert (2 websites opend) | fatigue, behandlung (1 webiste opened) | psychologische Beratung, 22529 (1 website opened) | Prostataentfernung, schmerzen (1 website opened)  |
| P12 | König der Löwen (0 websites opened) | Participant skipped this task | psychoonkologie (1 website opend) | Sarkom nachbehandlung (1 website opened) |
| P13 | müdigkeit und erschöpfung (0 websites opened) | Behandlung bei anhaltender Fatigue (1 Website opened) | phsychologische betreuung krebs im umkreis von hamburg eppendorf (1 website opened) | Wiestehen die heilungschanchenbei einen non hodgin syndrom (1 website opened) |
| P14 | symptome antriebslosigkeit (chosen from google autocompleted) (0 websites opened); Participant skipped this task after first search query | Was ist fatigue bei krebs (chosen from google autocompleted) (2 Website opened) | Participant skipped this task (with the described symptom „ I would go to my general practitioner“)  | was für mögliche folgen hat eine darm krebsbehandlung (1 website opened) |
| P15 | Begleiterscheinungen bei krebserkrankungen (1 Website opened) | umgang mit fatigue (1 Website opened) | 64546 ongologische betreuung 10 km umkreis (1 Website opened) | gebärmutterhalskrebs op (1 Website opened) |
| P16 | the participant did not open a website. He/She knew the term “Fatigue”which was the answer to the task | Therapie bei fatigue syndrom (1 Website opened) | Psychoonkologie lübeck (1 Website opened) | Neuste therapieformen bei hormonabhängigen Mamma ca (1 Website opened) |
| P17 | Antriebslosigkeit körperliche und seeling Erschöpfung nach Krebs OP (2 websites opened) | Particiapant did not use new search terms, as he did not close the browser | onkopsychologe hamburg 22529 ( websites opened) | adenid zystisches karzinom (4 website opend)  |
| P18 | Krebsbehandlung, Antriebslosigkeit, körperliche und seelische Erschöpfung; anhaltende Müdigheit (4 websites opened) | Participant did no use a search query, he simply reopened the webpages that he had opened for the previous task via the browsing history | Sie möchten gerne psychologische/psychoonkologische Unterstützungsangebote als Einzeltherapie in Ihrer Umgebung wahrnehmen Postleizahl: 22529 (0 websites opened) | chemotherapie nebenwirkungen (4 website opened)  |
| P19 | Krebs Antriebslosigkeit Erschöpfung Müdigkeit (1 website opened) | Behandlung fatigue (1 website opened) | psychoonkologische Unterstützungangebote 22529 Hamburg (1websites opened) | Hodenentfernung Testosteron (3 websites opened) |
| P20 | Brustkrebs chronische Müdikeit (1 website opened) | fatigue krebs behandlung (1 website opened) | psychoonkologische einzeltherapie norderstedt (1 website opened)  | Wie ist die Prognose bei hormonabhängigen Brustkrebs (1 website opened) |
| P21 | Participant stopped after two tasks. | Participant stopped after two tasks. | @google Dienstleiter fuer psychoonkologische unterstützungsangebote im raum mölln im Umkreis von 10 km (1 website opened) | Participant stopped after two tasks. |
| **Search terms per adjusted search query (Number of website opened per search query)** | P1 |  |  |  |  |
| P2 |  | Was tun bei Fatigue Syndrom (opened 2 websites) ; Second adjustment: Fatigue Homöopatisch Behandeln (opened 0 Websites); Third adjustment: Tipps für Behandlung eines Fatique Syndroms (opened 1 Website)  |  |  |
| P3 | psychische Behandlung nach Krebsdiagnose Hamburg (1 website opened) |  | Ich suche psychoonkologische (Google Voice Search: 0 websites opened); Seond adjustment: Ich suche psychoonkologische Beratung in Hamburg 22 (Google Voice Search) (2 websites opened) |  |
| P4 |  |  |  | tamoxifen (1 website opened) |
| P5 |  |  |  |  |
| P6 |  |  |  |  |
| P7 | Nach Krebsbehandlung Antriebslosigkeit, körperliche und seelische Erschöpfung (2 wesbites opened) |  |  |  |
| P8 | Welche Krebsart verursacht Depression Schlaflosigkeit, übelkeit (1 website opened) |  | Participant skipped this tasks due to time issues | Participant skipped this tasks due to time issues |
| P9 | Nebenwirkung Krebserkrankung (1 website opend); Second Adjustment: Müdigkeit krebserkrankung (0 websites opened) |  | psychologische Einzeltherapie Lugenkrebs plz 21435 (1 websites opened) |  |
| P10 |  |  | psychoonkologische Beratung Buxtehude (1 website opened) |  |
| P11 |  |  |  |  |
| P12 | körperliche erschöpfung bei krebspatienten (1 website opened) |  |  | sarkom erkrankung (1 website opened) |
| P13 | Müdigkeit und erschöpfung bei krebsbehandlung (1 Website opened) |  |  |  |
| P14 |  | therapie bei fatigue syndrom (1 Website opened) |  |  |
| P15 |  |  |  |  |
| P16 |  |  |  |  |
| P17 |  |  | 22529 hamburg psychologische/psychoonkologische (1 website opened); Second adjustment: hamburg eimsbüttel psychologische/psychoonkologische (0 websites opened) | chemotherapie nebenwirkungen leber |
| P18 |  |  |  | einseitige Hodenentfernung Testosteron (1 website opened) |
| P19 |  |  |  | Heilungschancen Brustkrebs Stadium 1 (One of google’s find related searches) ( 1 website opened) |
| P20 |  |  |  |  |
| P21 |  |  |  |  |
| **Position of opened websites in the google search results (from top to buttom)** | P1 | 1. | participant skipped this tasks | participant did not complete this task | participant did not complete this task |
| P2 | 1. | 1.; 9.; 1.; 1. | 2. (Maps Listings) | 1.; 4. |
| P3 | 2. | 2. | 1. (Maps Listings) | 3. |
| P4 | 1. | 1. | 1. | 2. |
| P5 | 1. | 5. | Skipped the last task | 1. |
| P6 | 1. | 2.; 2. | 10. | Participant skipped this task |
| P7 | 1.; 2. | participant skipped this task | 8. | 8. |
| P8 | 1. | 1. | Participant skipped this tasks due to time issues | Participant skipped this tasks due to time issues |
| p9 | 2.; 10.; 2. | 2. | 2.; 8.; 4.; 5.; 10. | 2. |
| p10 | 1.; 2. | 1.; 3. | 3. | 6. |
| p11 | 6.; 4. | 2. | 8. | 1.; 1. |
| p12 | 2.  | Participant skipped this task | 1.  | 1. |
| p13 | 2. | 1. | 3.  | 3. |
| P14 | Participant skipped this task | 1.; 5. | Participant skipped this task (with the described symptom „ I would go to my general practitioner“)  | 1. |
| P15 | 3. | 3.; 1. | 2. | 4. |
| P16 | No Website was opened; participant would’ve chosen the second or first , due to knowing the Websites | 1. | 5. | Not visible due to the Video problems |
| P17 | 1.; 2. | 2.; 4. | 6.; 7. | 1.; 6.; 8 |
| P18 | 1.; 2.; 5.; 7.  | Participant did no use a search query. The participant simply reopened the webpages that he had opened for the previous task via the browsing history (2.; 4. ) | 1. | 3.; 4.; 6.; 9. |
| P19 | 2. | 1. | 1. | 1.; 1.; 2.; 10. |
| P20 | 1. | 3. | 3. | 7. |
| P21 | Participant stopped after two tasks. | Participant stopped after two tasks. | 1. | Participant stopped after two tasks. |
| **Used Browser** | P1 | Google Chrome  | participant skipped this tasks | participant skipped this tasks | participant skipped this tasks |
| P2 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P3 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P4 | Google Chrome | Google Chrome | Google Chrome | Mozilla Firefox |
| P5 | Google Chrome | Google Chrome | skipped the last task | Google Chrome |
| P6 | Google Chrome | Google Chrome | Google Chrome | Participant skipped this task |
| P7 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P8 | Google Chrome | Google Chrome | Participant skipped this tasks due to time issues | Participant skipped this tasks due to time issues |
| p9 | Google Chrome | Google Chrome | Google Chrome  | Google Chrome |
| p10 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| p11 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| p12 | Mozilla Firefox | Participant skipped this task | Mozilla Firefox | Mozilla Firefox |
| p13 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| p14 | Google Chrome | Google Chrome | Participant skipped this task (with the described symptom „ I would go to my general practitioner“)  | Google Chrome |
| p15 | Mozilla Firefox | Mozilla Firefox | Mozilla Firefox | Mozilla Firefox |
| P16 | the participant did not open a website. He/She knew the term “Fatigue”which was the answer to the task | Google Chrome | Google Chrome | Google Chrome |
| P17 | Mozilla Firefox | Particiapant did not use new search terms, as he did not close the browser | Mozilla Firefox | Mozilla Firefox |
| P18 | Google Chrome | Participant did no use a search query. The participant simply reopened the webpages that he had opened for the previous task via the browsing history (2.; 4.) | Google Chrome | Google Chrome |
| P19 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P20 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P21 | Participant stopped after two tasks. | Participant stopped after two tasks. | Mozilla Firefox | Participant stopped after two tasks. |
| **Comments on the reliability of the website**  | P1 | “Kresbgesellschaft (ed: *name of a website*) is a good webpage. It is not a forum“ | “The first result (ed:*google search listings*) is netdoktor.de (ed*: name of a website*). I am not sure if everything is realiable on that site.” |  |  |
| P2 | “ I choose (ed:*from the google search lstings*) krebsgesellschaft.de (ed*: name of a website*), because there I get good information” | “I think that the stars (ed: *ratings of the website*) say nothing about the quality of the website”“I would chose the fatigue society (ed*: name of a website*). Doesn't have to mean anything, but lets see what they suggest”  |  | “What I wouldn't read are forums. Where any laymen wrote what you did and that they showered and whatnot. I would rely on medical tips” |
| P3 |  |  |  |  |
| P4 |  |  |  |  |
| P5 |  |  |  |  |
| P6 |  |  |  |  |
| P7 | “Apothekenumschau.de (ed*: name of a website*) that is a commercial website to me (ed: *For the particiapant that seemed to be a reason to not open the website*)” |  |  | “The first search result is an advertisment (ed:*First google search listings was marked as an google ad*). Therefore I will not consider that webpage.” |
| P8 |  |  |  |  |
| p9 |  |  |  |  |
| p10 |  |  |  |  |
| p11 |  |  |  |  |
| p12 |  |  |  |  |
| p13 |  | “The information is mostly generic. I would read this information, but also consult my doctor about it.” |  |  |
| p14 |  |  |  |  |
| p15 |  |  |  |  |
| P16 |  |  |  |  |
| P17 |  |  | “I got offers here from yelp.com (ed*: name of a website*). I have problems with openening this website because for me that is dubious information” | While the participant was searching the google listings “ I would leave out, everything that is marked as an advertisement“ |
| P18 | “I'm always skeptical of the first hits (ed: *participant was talking google search listings*)” |  |  | “This is an ad. I skip this one. (ed:*The participant was looking at google search listings* “  |
| P19 |  |  |  |  |
| P20 |  |  |  | “(Being on the website frauenmedizin-schaefflerhof.de) I am not sure if this is a reliable website. I will go back. “ |
| P21 |  |  | “ that kind of looks like a reliable website to me (ed: *the participant scanned the krebsinformationsdienst website*)” |  |
| **Additional Comments** | P1 |  |  |  |  |
| P2 |  |  |  | “I have informed myself, which is not appreciated (ed: *the participant thinks that physicians do not appreciate when you search for information online*)  |
| P3 |  |  |  |  |
| P4 |  |  |  |  |
| P5 |  |  |  |  |
| P6 |  |  |  |  |
| P7 |  |  |  |  |
| P8 |  |  |  |  |
| P9 |  |  |  |  |
| P10 |  |  |  |  |
| P11 |  |  |  | “ Iam a little bit nervous” (ed: *participant was starting the first task)*  |
| P12 |  |  |  |  |
| P13 |  |  |  | “At the beginning of the treatment, you do not want to read negative stuff? You only want to read the positive stuff”.  |
| P14 |  | After Participant told a story from his past. Researcher asks: “Can you still remember what the task was?” Participant: “No. But this looks like the question” Moves courser over the headline “What causes fatigue syndrome?” |  |  |
| P15 |  |  |  |  |
| P16 |  |  |  | After reading the first task (the document with the task is still open): “Alright, now I will go online. Can you help me? how do I get there, do I have to close this?” Researcher: “You can close, minimize, or leave it open”. Participant proceded to close the task and opened Chrome, without help from the researcher. |
| P17 |  |  |  |  |
| P18 |  |  |  |  |
| P19 | “ I get the feeling using too many search terms has a negative influence on the search results. Then google has to decided which search terms is the most important one” |  |  |  |
| P20 |  |  |  |  |
| P21 |  |  | “I am pretty nervous.I keep forgetting the assignement” |  |

*a Imagine that you have noticed the following effects on your physical and mental well-being in the last few weeks during your cancer treatment: Listlessness, physical and mental exhaustion; persistent fatigue that does not improve even through sleep or rest. Please use the Internet to find out which symptom/syndrome it might be.*

*bPlease search the internet for treatments or methods of treatment to improve the handling of chronic/ persistent 'fatigue'.*

*c Please search the Internet for various service providers who offer psycho-oncological counselling in the Eppendorf area.*

*d Formulate a disease-related question you have had in the past, and show how you would approach or have approached this question on the Internet*

**Table 2.** Performance parameters of task execution for tasks 1-4.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Partici-pant** | **Task 1 a** | **Task 2 b** | **Task 3 c** | **Task 4 d** |
| Task Completion | P1 | completed | participant skipped this task | participant skipped this task | participant skipped this task |
| P2 | completed | completed | completed | completed |
| P3 | not completed | not completed | not completed | not completed |
| P4 | completed | not completed | completed  | completed |
| P5 | not completed  | not completed | skipped the last task | completed |
| P6 | not completed | completed with help | not completed  | participant skipped this task |
| P7 | completed | participant skipped this task | completed | not completed |
| P8 | completed with help | completed with help | participant skipped this tasks due to time issues | participant skipped this tasks due to time issues |
| P9 | completed | completed | not completed | completed |
| P10 | completed | completed | completed | completed |
| P11 | completed | completed | completed | completed |
| P12 | not completed | participant skipped this task | not completed | not completed |
| P13 | completed | completed | completed | not completed |
| P14 | not completed | not completed | participant skipped this task (with the described symptom „ I would go to my general practitioner“)  | completed |
| P15 | completed | completed | not completed | completed |
| P16 | completed | completed | completed | not completed |
| P17 | completed | completed | not completed | completed |
| P18 | completed | completed  | completed | completed |
| P19 | completed | completed | completed | completed |
| P20 | not completed  | not completed | completed | not completed |
| P21 | participant stopped after two tasks. | participant stopped after two tasks. | not completed | participant stopped after two tasks. |
| Time per task (in seconds) | P1 | 54 | participant skipped this task | participant skipped this task | participant skipped this task |
| P2 | 77  | 351  | 107  | 265  |
| P3 | 152  | 275  | 346  | 269  |
| P4 | 156  | 137  | 90  | 287  |
| P5 | 85  | 324  | skipped the last task | 154  |
| P6 | 322  | 233  | 210  | participant skipped this task |
| P7 | 461 | participant skipped this task | 154 | 340  |
| P8 | 445  | 189  | participant skipped this tasks due to time issues | participant skipped this tasks due to time issues |
| P9 | 329  | 135  | 843  | 116  |
| P10 | 234  | 209  | 110  | 153  |
| P11 | 132  | 126  | 190  | 86  |
| P12 | 213  | Participant skipped this task | 190  | 522  |
| P13 | 203  | 156  | 272  | 235  |
| P14 | 107  | 467  | participant skipped this task (with the described symptom „ I would go to my general practitioner“)  | 720  |
| P15 | 184  | 365  | 198  | 495  |
| P16 | 115  | 216  | 81  | 275  |
| P17 | 58  | 155  | 205  | 696  |
| P18 | 292 | 195 | 316 | 328 |
| P19 | 191 | 140  | 219 | 372 |
| P20 | 80 | 68 | 104  | 177 |
| P21 | participant stopped after two tasks. | participant stopped after two tasks. | 671 | participant stopped after two tasks. |

*a Imagine that you have noticed the following effects on your physical and mental well-being in the last few weeks during your cancer treatment: Listlessness, physical and mental exhaustion; persistent fatigue that does not improve even through sleep or rest. Please use the Internet to find out which symptom/syndrome it might be.*

*bPlease search the internet for treatments or methods of treatment to improve the handling of chronic/ persistent 'fatigue'.*

*c Please search the Internet for various service providers who offer psycho-oncological counselling in the Eppendorf area.*

*d Formulate a disease-related question you have had in the past, and show how you would approach or have approached this question on the Internet.*

**Table 3.** Performance problems that were observed in tasks 1-4.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Task 1 a** | **Task 2 b** | **Task 3 c** | **Task 4  d**  |
| **Operating the computer or Internet browser**  |
|  | Operating the keyboard/locating keys | [P4: The participant was typing very slowly with one finger][P6: The participant had problems to find the ‘enter’ key][P8: The participant accidently hit search with an unfinished search query][P12: The participant was typing very slow typing][P13: The participant accidently hit the search button with an unfinished search query]  | [P4: The participant was typing very slowly with one finger][P6: The participant had problems to find the ‘enter’ key][P12: The participant was typing slowly][P21: The participant had problems to locate keys/ very slow typing] | [P3: The parcticipant was confusing the spacebar and the enter key][P4: The participant was typing slowly with one finger][P12: The participant was typing slowly] | [P4: The participant was typing slowly with one finger] [P12: The participant was typing slowly with one finger][P13: The participant was typing slowly with one finger] |
|  | Controlling the mouse/clicking the mouse (e.g. problems with double-clicking) | [P4: The participant had problems to open the browser via the desktop (too much time between the two clicks)][P5: The participant had problems with opening the browser (too much time between the two clicks)][P6 : The participant had problems with opening the browser (too much time between the two clicks)]][P12: The participant had problems with opening the internet browser (double click)][P12: The participant accidently opend the google autocompletion (“König der Löwen”)][P8: The particiant had difficulties to enter the search query (accidently stopped typing in his/her search query by clicking at a random spot without noticing it. Then he/she accidently erased the search query and had to retyp] | [P2: The participant was not sure whether one or two clicks are sufficient to open a website][P5: The participant had problems with opening the browser (too much time between the two clicks)]] | [P3: Not sure whether one or two klicks are sufficient to open a the browser via the desktop][P12: Problems with opening the internet browser (double click)] | [P5: Not sure whether one or two klicks are sufficient to open a website][P12: problems with opening the browser] |
|  | Operating the Internet browser (e.g. the participant is not able to open the browser) | [P5: The participant Could not enter search terms, because he/she clicked on an icon outside of the browser][P6: The particiant did not know how to open the internet browser: „How can I find it (the browser?“] | [P14: The participant clicked randomly somewhere outside the URL bar to adjust the search] | [P5: The particiant had problems with finding the browser on the desktop: “What does the icon look like?”][P3: The particiant typed in his search terms into the google search engine, but was not able to start the google search. (Possible solution were to press enter or click on the search icon)][P21: The participant did not know how to close the internet browser] | [P4: The particiant is clicking the „back“ button in the browser in order to find the task][P5: The particiant had problems with finding the browser icon on the desktop][P16: The particiant asked the researcher how to start the search after typing in her search terms.] |
|  | Closing the web browser after the task and reopening it for the next task | [P1; P2; P3; P4; P5; P6; P7; P8; P9; P11; P12; P13; P14; P15; P20] | [P2; P3; P4; P5; P6; P8; P9; P11; P13; P14; P15; P16; P20] | [P2; P3; P4; P7; P9; P11; P12; P13; P15; P16; P20; P21] | [P2; P3; P4; P5; P7; P9; P11; P12; P13; P14; P15; P16; P20] |
|  | Reading difficulties due to font size (eye sight) |  | [P16: Researcher: Should I increase the font size for you? Participant: Yes please”] |  |  |
|  | Participants with > 1 problem per task | P4; P5; P6; P8; P12 | None | P3; P12 | P4; P5; P12 |
| **Navigation and Orientation** |
|  | Keeping orientation on a website |  | [P6: The participants could not orient on the website. He/she did not find the navigation button that would have led him/her to the right information on the netdoktor website / did not understand how jump marks work] |  |  |
|  | Using and understanding a PDF file | [P5: It seems that the participant did not know the differnce between a PDF- File and a browser. He/ She became disoriented] |  |  |  |
|  | Using dropdown lists |  | [P3: The participant did not understand the dropdown menu on the website] |  |  |
|  | Understanding how the google search works | [P8: The paticipant did not unterstand what google recommendations/preditcitons are: „I did not write that“] |  |  |  |
|  | Using/ Opening several tabs (i.e. the participant used more than one tab simultaneously for completing the task) | [P17: The particiant opened 2 tabs from the first page of goggle search results that seemd interesting to him for completing the task][P18: The particiant opened five tabs from the first page of the google search results that seemed interesting to him for completing the task] | [P9: The particiant opened a website in a new tab][P17: The particiant used different links in tabs within a webpage to open information about all topics that might be interesting for treating fatigue][P19: The particiant opened a website in a new tab] | [P19: The particiant opened a website in a new tab] | [P10: The particiant used a second tabs][P17: The particiant opened four tabs from the first page of the google search results that seemed interesting to him for completing the task][P17: The particiant looked at googles realted searches to if he should adjust his search][P18: The particiant used two search queries in two different tabs. One search query was less and one more specific (side effects chemotherapie/ side effects chemotherapie liver)] [P18: The particiant opened four tabs from the first page of the google search results that seemed interesting to him for completing the task][P19: The particiant opened a website in a new tab] |
|  | Participants with > 1 problem per task | None | None | None | None |
| **Utilizing search strategies** |
|  | (Too) broad search query query (i.e. the participant only used a single search term] |  | [P3: The participant used a single search term, which did not help to find a solution for the task][P9: The particiapant only used a singel search term, ‚fatigue‘] | [P12: The particiapant only used a singel search term] | [P3: The term ‘prostatecancer’ itself was to broad to complete the task][P9: The particiapant only used a singel search term] |
|  | Unspecific or non-task related search query | [P7: The participant did not use any term that is connected to cancer, which had negative effects on the results of his/her search query][P3: „Psychological treatment with cancer diagnosis“. The search terms had nothing to do with the task] [P6: The Participant did not used the word cancer or any synonym, so none of the first search results had anything to do with cancer- but the participant did not adjust the searchterms][P8: The participant did click on one of the google search recomedations (S3 Patientenrichtlinie) that had little to do with the task][P8: The participant searched for ‚which kind of cancer causes depression, sleeplessness, nausea)´, which had little to do with the assignement] [P12: The participant entered the terms ‘ lion king’ in the search query which had nothing to do with the task][P13: The participant did not use any term that is connected to cancer, which had negative effects on his search query][P14: “Symptom antriebslosigkeit”. The search terms included only one symptom of fatigue and were therefore not specific enough][P9: The participant searched for ‚sideeffects of cancer therapy‘ which was not goal oriented for finding information on the sideeffect sof fatigue ] | [P4: P5: The participant did not include a ‘treatment’ related term into his/her serch query which had negative effects on the results of his/her search query].[P5: The participant did not include a ‘treatment’ related term into his/her serch query which had negative effects on the results of his/her search query][P10: The search query was too long/ many buzzwords] [P14: The participant searched for ‘what is fatigue concerning cancer’ which is not goaldoriented when searching for treatment options][P19: The participant did not use the term ‘cancer’ in his search query, which had negative influence on the search results] | [P4: The participant forgot to specify the area where he/she was looking for psychooncological help][P6: The participant forgot to specify the area where he/she was looking for psychooncological help][P9: The participant forgot to specify the area where he/she was looking for psychooncological help][P11: The participant did not specify his search for cancer or psychoonocology ‚ psychological counselling‘ ][P11: The participants searched for psychological- instead of psychoncological support in Hamburg][P15: The participant looked for an oncologist, instead of a psychologist or Psychooncologist][P17: The participant used the search term ‘oncopsychologist’ instead of ‘psychooncologist’][P18: The participant used too many search terms. Therefore he did not find google search results that could help him to complete the task][P21: The search query is way to long to find adequate results and the patient added the term @google in the search query] | [P14: The participant did not specify the cancer therapy he received. Sideeffects of treatment can differ depeding on the type of treatment] |
|  | Spelling and grammar errors in search query | [P6: The participant had grammatical errors in his/her search query] [P20: The participant misspelled the term tiredness and ignored the google “did you mean” option] | (P2: Fatique instead of fatigue. The participant ignored the google “did you mean” option) | [P4: The participant typed “10km” instead of “10 km”, ignored the ‘did you mean’ option)[P6: ‘Psychologiche’ instead of ‘psychologische’. The participant ignored the ‘did you mean’ option] [P9: The participanthad a spelling error in the search query „lugenkrebs“ instead of „lungenkrebs“; did not use the google ‚did you mean‘ option][P13: Spelling error in the search query. Psychological was misspeld, the participant ignored the ‘ did you mean’ option][P21: The participant misspelled the word ‘service provider’]  | [P13: The participant had no space bars in the search query and misspelled “non Hodgkin syndrom”; ignoring the ‘did you mean’ option][P9:He/She misspelled the word bronchial carcinoma in the search query and irgnored the google ‘did you mean’ option] |
|  | Unable to adjust the search query | [P9: The participant adjusted the search query from ‚side effect of cancer therapy‘ to ‚side effect of cancer‘ which still was non-task related / unable to finde the right answer] |  | [P7: The participant was not satisfied with the google search results. He/she was trying, but was not sure how to adjust the search terms in order to get better search results] |  |
|  | Selection of task-related search results |  |  | [P6: The participant selected a random results to fullfill the task („I just have to open that link“ (opend a random link)][P9: The participant opened a website that was concerned with immunotherapie] [P17: The participant opened a website of people that are not specialized in psychooncology] | [P2: The participant directly opened the website netdoctor, because he/she was familiar with the website. The participant did not look at the other search results (open a random link)][P12: The participant left a website and reopened the same website seconds later, without recognizing it] |
|  | Copy the task and paste it into the search terms | [P7: The participant used copy paste for his search query :‘ *‚Listlessness, physical and mental exhaustion; persistent fatigue‘]*[P11: The participant used copy paste for his search query:‘ *Listlessness, physical and mental exhaustion; persistent fatigue that does not improve even through sleep or rest‘*][P10: The participant used copy paste for his search query:‘ *cancer treatment: Listlessness, physical and mental exhaustion; persistent fatigue that does not improve even through sleep or rest‘]*[P17: The participant used copy paste for his search query: ‘*Listlessness, physical and mental exhaustion;’]*[P18: The participant used copy paste for his search query: ‘the whole task’] [P19: The participant used copy paste for his search query: ‘listlessness, exhaustion, tiredness’] | [P7: The participant used copy paste for his search query:‘dealing with chronical fatigue’][P9: The participant used copy paste for his search query][P11: The participant used copy paste for his search query :‘ *fatigue‘*][P10: The participant used copy paste for his search query ‚ *treatments or methods of treatment to improve the handling of chronic/ persistent 'fatigue']* | [P7: The participant used copy paste for his search query:‘psychooncological support in your area’][P11: The participant used copy paste for his search query][P17: The participant used copy paste for his search query: ‚ *psycho-oncological counselling’]*[P18: used copy paste for his search query: ‘Please search the Internet for various service providers who offer psycho-oncological counselling in the Eppendorf area’ (deleted parts of the terms before starting the google search)][P19: b: ‘psycho-oncological support services’]  |  |
|  | Participants with > 1 problem per task | [P9; P8; P6] | None | [P4; P6; P9; P11; P17] | None |
| **Evaluating relevance and reliability** |
|  | Not checking the source of the information (Only recorded if someone did it) |  |  |  |  |
|  | Searching in commercial websites  | [P9: The participant opened a google ad (www.zapmeta.de)] |  | [P6: The participant opened the google ad (informationsvine.com)][P9: The participant opened the google ad (careacross.com)][P9: The participant opened the comercial website roche.de (pharmaceutical company)][P9: The participant opened a google ad (kensaq.com)] | [P10: The participant opend a google ad (info.blasenkrebs.de)][p18: The participant opened the comercial website hexal.de (pharmaceutical company)] |
|  | Scanning a website for relevant information (i.e. participant opens a website without reading the information on the website and then stops the task thinking that the task is completed) | [P5: The participant did not scan the website. The participant said that he/she was sure that the website could answer the question] [P20 : The participant did not scan the website. The participant said that he/she was sure that the website could answer the question] | [P20 : The participant did not scan the website. The participant said that he/she was sure that the website could answer the question] |  |  |
|  | Selecting a relevant answer |  |  |  |  |
|  | Verified the information they found on one website with information from another website (Only recorded if someone did it) | [P10: The participant did open a second website to confirm that the searched symptoms name is indeed fatigue][P18: The participant verified the answer (the name of the symptom is fatigue) to the task in a second link] | [P10: The participant did open a second website to confirm the treatment options of fatigue, he found on the first website ][P18: The participant verified the information he/she found in the first with the information of a second website] | [P18: The participants adjusted his serch query, just to see if it would change the google search results] | [P10: The participant opened a second tab to verify the information found in the first webpage] |
|  | Participants with > 1 problem per task | [P1; P2; P3; P4; P5; P6; P7; P8; P9; P11; P12; P13; P14; P15; P17; P19; P20] | [P2; P3; P4; P5; P6; P8; P9; P11; P13; P14; P15; P16; P17; P19; P20] | [P2; P3; P4; P6; P7; P9; P10; P11; P12; P13; P15; P17; P19; P20] | [P2; P3; P4; P5; P7; P9; P10; P11; P12; P13; P14; P15; P16 P17; P18; P19] |
| **Understanding of the task/ Keeping focus** |
|  | Understanding the task (Even after getting help from the research assistant)  |  [P3: The participant clearly did not understand the task] [P12: It seemd that the participant did not know what he was supposed to search][P13: The participant tried to find the source of fatigue symptoms, instead of the name of the combined symptoms, i.e. “Fatigue”][P14: It seemed that the participant did not know why he was supposed to search for an overarching symptom (“ I don’t know what I am supposed to search”), if the listed sympoms already describe his condition (“*Listlessness, physical and mental exhaustion, that are my symptoms, I do not have to search them“*] | [P6: The Research leader had to reread the task to the participant in order for him/her to understand it]  [P14: Thought that the task was to understand what fatigue is, instead of finding treatment for it] |  |  |
|  | Forgetting the task during the operation  |  | [P9: The participant had to reread the task 1 minute into the search][P14: Wrote fatigue on a peace of paper in order to remember it] | [P21: The participants forgot the the task right before opening the browser and starting the search/ The same thing happened for a second time] | [P4: The participant forgot the task during the search, even though she picked the task on her own] [P16: The participant asked at the beginning and during the task (again) what exactly he/she has to do; He /She did not understand that he/she had to reproduce her way of finding information online. Later asked a third time, if she had to aswer questions afterwards] |
|  | Keeping focus on the needed information/task (participant gets distracted by other non-task related information) |  [P13: The participant tried to find the source of fatigue symptoms, instead of the name of the symptom][P14: The participant started telling a story about sleeping in a car while reading the task. Then stopped the task] |  [P14: After telling a story, the participant was asked if he could remember the task. He answered “No”, proceded to move the cursor to the headline “What causes fatigue syndrome?” and says: “But this looks like the question.”; opened a different website and starting telling a story about his garden] | [P6: The participant got distracted from the task by a online psychological chat support] | [P13: The participant forgot the goal of the task] [P14: Started telling a story mid-task, ended up forgetting the task.]  [P20: Found a lot of things that seem interesting to him/her on a website, but not the answer to the task. He / She stopt the search on the website with the comment that this website has a lot of interesting things to offer] |

*aImagine that you have noticed the following effects on your physical and mental well-being in the last few weeks during your cancer treatment: Listlessness, physical and mental exhaustion; persistent fatigue that does not improve even through sleep or rest. Please use the Internet to find out which symptom/syndrome it might be.*

*bPlease search the internet for treatments or methods of treatment to improve the handling of chronic/ persistent 'fatigue'.*

*cPlease search the Internet for various service providers who offer psycho-oncological counselling in the Eppendorf area.*

*dFormulate a disease-related question you have had in the past, and show how you would approach or have approached this question on the Internet.*

Table 4. Search and strategic characteristics of task execution for tasks 5-8.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Partici-****pant** | **Task 5a** | **Task 6b**  | **Task 7c** | **Task 8d** |
| **Starting Point of the search query** | P1 | participant did not execute this task | participant did not execute this task | participant did not execute this task | participant did not execute this task |
| P2 | google.com | google.com | google.com | google.com |
| P3 | google.com | google.com | google.com | google.com |
| P4 | google.com | google.com | google.com | google.com |
| P5 | google.com | google.com | google.com | google.com |
| P6 | google.com | google.com | google.com | google.com |
| P7 | google.com | google.com | google.com | this task was skipped, because the participant was already looking for diet change options in task 4  |
| P8 | google.com | google.com | google.com | google.com |
| P9 | google.com | google.com | google.com | google.com |
| P10 | google.com | google.com | google.com | google.com |
| P11 | google.com | google.com | google.com | google.com |
| P12 | google.com | google.com | participant skipped this task | google.com |
| P13 | google.com | google.com | google.com | google.com |
| P14 | google.com | participant skipped this task (he/she did not trust the website krebsinformationdienst.de) | participant skipped this task (he/she lost focus) | google.com |
| P15 | google.com | google.com | google.com | google.com |
| P16 | google.com | google.com | google.com | google.com |
| P17 | google.com | google.com | google.com | google.com |
| P18 | google.com | google.com | google.com | google.com |
| P19 | google.com | google.com | google.com | google.com |
| P20 | google.com | google.com | google.com | google.com |
| P21 | participant stopped after two tasks. He/ She felt that the task put to much pressure on him/her | participant stopped after two tasks. | google.com | participant stopped after two tasks. |
| P22 | the participant stopped the study before the beginning of the first task, because he/she could not remember the question.  | the participant stopped the study before the beginning of the first task, because he/she could not remember the question  | google.com | the participant stopped the study before the beginning of the first task, because he/she could not remember the question  |
| **Opened/selected websites** | P1 | participant did not execute this task | participant did not execute this task |  participant did not execute this task | participant did not execute this task |
| P2 | leitlinienprogramm-onkologie.de | krebsinformationsdienst.de  | krebsgesellschaft.de; netdoktor.de  | leben-mit-brustkrebs.de |
| P3 | leitlinienprogramm-onkologie.de | krebsinformationsdienst.de | derwesten.de | prostatakrebs.bps.de (patient forum) |
| P4 | leitlinienprogramm-onkologie.de | krebsinformationsdienst.de | Googles featured snippet, aka answer box (krebsgesellschaft.de) | volkskrankheiten.net |
| P5 | leitlinienprogramm-onkologie.de | krebsgesellschaft.de | Google featured snippet, aka answer box (krebsgesellschaft.de); krebsinformationsdienst.de; netdoktor.de | Google featured snippet, aka answer box (Krebsgesellschaft.de) |
| P6 | senelogie.de | krebsinformationsdienst.de | Patient did not open a website | krebsinformationsdienst.de |
| P7 | leitlinienprogramm-onkologie.de; wikipedia.de; leitlinienprogramm-onkologie.de | krebsinformationsdienst.de | krebsgesellschaft.de | this task was skipped, because the participant was already looking for diet change options in task 4  |
| P8 | leitlinienprogramm-onkologie.de,  | krebsinformationsdienst.de | thieme.de (Google ad); Google featured snippet, aka answer box (chemotherapie-hilfe.de); | opened a Google snipped (which foods kill cancer cells) that was offered by gesund24.at  |
| P9 | Leitlinienprogramm-onkologie.de | docplayer.org; after adjustment: Krebsinformationsdienst.de | zapmeta.de (Google ad) | apothekenumschau.de |
| P10 | leitlinienprogramm-onkologie.de | krebsinformationsdienst.de | onkologie.hexal.de; after adjustment: krebsinformationsdienst.de | info-blasenkrebs.de; zentrum der gesundheit.de |
| P11 | awmf.de | krebsinformationsdienst.de | krebsgesellschaft.de | Googles featured snippet, aka answer box (forumgesundheit.at) |
| P12 | leitlinienprogramm-onkologie.de | [krebsinformationsdienst.de](http://www.krebsinformationsdienst.de);[www.wpe-uk.de](http://www.wpe-uk.de), after second adjustment: krebsinformationsdienst.de | participant skipped this task | krebsgesellschaft.de |
| P13 | leitlinienprogramm-onkologie.de | [krebsinformationsdienst.de](http://www.krebsinformationsdienst.de) | www.lymphome.de | [nutricia.de](http://www.nutricia.de); krebsgesellschaft.de |
| P14 | leitlinienprogramm-onkologie.de | participant skipped this task (he did not trust the website krebsinformationdienst.de) | participant skipped this task (he/she lost focus) | [ratgeber-darmgesundheit.de](http://www.ratgeber-darmgesundheit.de) (Google ad); [chefkoch.de](http://www.chefkoch.de); paradisi.de |
| P15 | krebsgesellschaft.de | [krebsinformationsdienst.de](http://www.krebsinformationsdienst.de) | gesundheitsinformation.de | krebsinformationsdienst.de (x3); zentrum-der- gesundheit.de (Commercial website) |
| P16 | leitlinienprogramm-onkologie.de | krebsinformationsdienst.de | Participant skipped this task | gynecology-guide.com |
| P17 | leitlinienprogramm-onkologie.de/patientenleitlinie/prostatakrebs; leitlinienprogramm-onkologie.de/leitlinie/prostatakarzinom | krebsinformationsdienst.de | uni-ulm.de; krebsinformationsdienst.de | krebsgesellschaft.de x 2; apothekenumschau.de |
| P18 | 2 x times: awmf.org | krebsinformationsdienst.de | krebsinformationsdienst.de; krebsgesellschaft.de; apotheken-umschau.de | krebsgesellschaft.de; coloplast.de; lco.de (second site of search results from Google), hgk-koeln.de |
| P19 | leitlinienprogramm-onkologie.de | Krebsinformationsdienst.de | krebsgesellschaft.de | krebsinformationsdienst.de |
| P20 | leitlinienprogramm-onkologie.de | Krebsinformationsdienst.de | Googles featured snippet, aka answer box (krebsgesellschaft.de) | krebsgesellschaft.de |
| P21 | participant stopped after two tasks. | participant stopped after two tasks. | no website opened | participant stopped after two tasks. |
| **Search terms per search query (Number of websites opened per search query)** | P1 | participant did not execute this task | participant did not execute this task | participant did not execute this task | participant did not execute this task |
| P2 | Patientenrichtlinie für Brustkrebs (opened no website) | Krebsinformationsdienst (1 website opened )  | Nebenwirkung der Krebstherapie (0 websites openend)  | Ernährungstipps bei Brustkrebs (1 website opened) |
| P3 | prostata krebs (1 website opened) | Einmal das Krebsinformationsdienst (Google Voice Search (0 websites openend)) | spätfolgen prostatakrebs (1 website opened) | Erhnährung bei Prostatakrebs (Google Voice Search: 1 website opened)  |
| P4 | patientenrichtlinie brustkrebs (1 website opened) | krebs im internet sicher surfen (1 website opened) | Strahlentherapie Nebenwirkungen (0 websites opened, only opened the Google featured snippet, aka answer box) | Ernährung bei Krebs (1 Website opened) |
| P5 | patientenrichtlinie burstkrebs (1 website opened) | information krebs (1 website opened) | nebenwirkungen chemo- und strahlentherapie (opened 1 website) | ernährung bei Krebserkrankung |
| P6 | Patient hamburg (0 websites opened) | kerebs information (1 website opened) | nebenwirkungen nach der krebs operation (0 websites opened) | ernährung nach der op. bei krebs patienten (opened 1 website) |
| P7 | patientenrichtlinie (1 website opened) | Krebs im Internet: sicher surfen (1 website opened) | Chemotherapie und spätere 5 Folgewirkungen (1 website opened) | This task was skipped, because the participant was already looking for diet change options in task 4  |
| P8 | patientenrichtlinien (1 website opend) | Lungenkrebs was nun (1 website opened) | Nebenwirkungen der Chemotherapie (1 website opend | Wie ernähre ich mich gesund bei Lungenkrebs und wie wirke ich den Nebenwirkungen aus (0 websites opened) |
| P9 | patientenrichtlinien (1 website opend) | krebs im internet,sicher surfen( 1 website opened) | nebenwirkungen operation lungenkarzinom (1 website opened) | Ernährungsberatung Krebspatienten (1 websites opend) |
| P10 | Patientenleitlinie Blasenkrebs(1 website opened)  | : “ Krebs im Internet: Sicher surfen” (1 website opened) | Nebenwirkungen BCG therapie (1 website opened) | Blasenkrebs ernährung (1 website opened) |
| P11 | patientenrichtlinie, prostatakrebs (1 website opened) | Krebsinformationsdienst, Krebs im Internet; sicher surfen“ (1 website opened) | chemotherapie, nebenwirkungen (1 website opened) | prostatakrebs ernährung (1 website opend) |
| P12 | bei prtatakreebs (0 websites opened) | [www.krebsinformation](http://www.krebsinformation) (1 websites opened) | participant skipped this task | ernährung bei krebserkrankung (1 website opened) |
| P13 | richtlinie beibrustkrebs (1 website opened) | krebs im internet sicher surfen (1 website opened) | Nebenwirkungen nach chemotherapie beilymphdrüsenkrebs (1 Website opened) | ernährung bei krebsdiagnosen (1 website opened) |
| P14 | patientenrichtline (1 website opened) | Participant skipped this task (he did not trust the website krebsinformationdienst.de) | Participant skipped this task (he/she lost focus) | was darf ich bei darmentzündung essen (3 websites opened) |
| P15 | patientenrichtlinie (1 Website opened) | krebs im internetsichersurfen (0 Websites opened) | nebenwirkungen einer gebärmutterentfernung (1 Website opened) | ernährung nach gebärmutterhalskrebs (4 Website opened) |
| P16 | leitlinie brustkrebs (1 Website opened) | Krebs im inzernet sicher surfen (1 Website opened) | participant skipped this task |  Ernährung während chemo bei mamma ca (1 Website opened) |
| P17 | prostata krebs Patientenrichtlinie (2 website opened) | Krebs im Internet: Sicher surfen (1 website opened) | adenoid-zystische Karzinom strahlentherapie nachwirkungen (2 websites opened) | krebsernährung nach der Therapie (3 webssites opened) |
| P18 | Patientenrichtlinie Darmkrebs (2 website opened) | „krebs im Internet: sicher surfen“ pdf (1 website opnened) | Nebenwirkungen Strahlentherapie krebs ( 3 websites opened) | Ernährungstipps Stoma (4 websites opened)  |
| P19 | Patientenrichtlinie Prostatakrebs (1 website opened) | „krebs im Internet: sicher surfen“ (1 website opened) | entfernung des Hoden über die Leiste (0 websites opened) | Nebenwirkung, Heilungsprozess Ernährung Krebserkankung (1 website opened) |
| P20 | patientenrichtlinie brustkrebs (1 website opened) | krebsinformationsdienst sicher surfen (1 website opened) | Nebenwirkungen tamoxifen (1 website opened) | Ernährung bei Brustkrebs (1 website opened) |
| P21 | participant stopped after two tasks. | participant stopped after two tasks. | Spätfolgen nach dikdarmresektionen (0 website opened) | participant stopped after two tasks. |
| **Search terms per adjusted search query (Number of website opened per search query)** | P1 |  |  |  | Erhnährung bei Prostatakrebs (same search terms) |
| P2 | Patientenleitlinien für Brustkrebs (Google „did you mean“ option); |  Krebsinformationsdienst „Krebs im Internet“  | Nebenwirkungen einer Hormontherapie von [ignored Google’s „did you mean“ option (bei) Brustkrebs] (1 website opened); Letrozol Nebenwirkung (1 website opened) | Vegetarische Ernährung bei Brustkrebs |
| P3 |  | Einmal das Krebsinformationsdienst Informationen (1- website opened)  |  |  |
| P4 |  |  |  |  |
| P5 |  |  | nebenwirkung bestrahlung brustkrebs (1 websites opend  |  |
| P6 | brustkrebs früherkennung (1 website opened) |  |  |  |
| P7 | wikipedia deutsch (1 website opened) |  |  |  |
| P8 |  | informationsblatt im internet sicher surfen (1 website opend | Nebenwirkungen der Chemotherapie (1 website opend |  |
| P9 |  | krebs im internet,siche surfen ( 1 website opened) |  |  |
| P10 |  |  | Nebenwirkung Neoblase (1 website opened)  | blasenkrebs welche ernährung vermeiden (1website opened) |
| P11 |  |  |  |  |
| P12 | leitlinie prostatakarzinom 2018 [Google „Find related searches“ (1.hit)] (0 sebsites opened);leitlinie prostatakarzinom kurzversion [Google „Find related searches“ (1.hit)] (1 website opened); | sarkom (1 website opened),2. adjustment: krebs im Internet (1 website opened) |  |  |
| P13 |  |  |  |  |
| P14 |  |  |  | Darmentzündung bananen (Google „Find related searches” option)(0. websites opened) |
| P15 |  | Krebs im internet sicher surfen (1 Website opened) (Google „Did you mean …“ option) |  |  |
| P16 |  |  |  |  |
| P17 |  |  |  |  |
| P18 |  |  | entfernung des Hoden über die Leiste (2 websites opened) |  |
| P19 |  |  |  |  |
| P20 |  |  |  |  |
| P21 |  |  | Die Folgen (Google „Find related searches” option)( 0. Websites opened |  |
| **Position in the Google search results (from top to buttom)** | P1 | participant did not execute this task |  participant did not execute this task | participant did not execute this task |  participant did not execute this task |
| P2 | 1. | 1.;1.  | 1. | 5. |
| P3 | 1. | 1. | 5. | 3. |
| P4 | 4. | 1. | 1. (featured snippet; aka answer box) | 3.  |
| P5 | 2. | 1. | 1. (featured snippet; aka answer box); 2; 8. | 1. (featured snippet; aka answer box) |
| P6 | 2. | 3. | Patient did not open a website | 1. |
| P7 | 2.; 1. ; 1. | 1. | 1. | This task was skipped; because the participant was already looking for diet change options in task 4  |
| P8 | 1. | 3.; 3. | 2.; 1. (featured snippet; aka answer box) | No website opened |
| P9 | 2. | 4. | 10 . | 2. |
| P10 | 1. | 2. | 1. | 2. |
| P11 | 4. | 3. | 2. | featured snippet; aka answer box (1. ) |
| P12 | 1.  | 1. ; 3.  | participant skipped this task | 2. |
| P13 | 1. | 4. | 8. | 6. |
| P14 | 1. | participant skipped this task (he/she did not trust the website krebsinformationdienst.de) | participant skipped this task (he/she lost focus) | 2.; 11.; 12. |
| P15 | 1. | 1. | 1. | 5.; 3.; 4.; 8. |
| P16 | 1. | 1. | participant skipped this task | 1. (Google featured snippet) |
| P17 | 1.; 2.  | 1. | 3.; 5. | 2.; 3.; 6. |
| P18 | 1.; 2.  | 1.  | 2.; 3.;7. | 1.; 4. ; 2. (SECOND PAGE OF THE SEARCH RESULTS); 3. (SECOND PAGE OF THE SEARCH RESULTS) |
| P19 | 1.; 2. | 2. | 2. | 3. |
| P20 | 1. | 1. | 2. | 2. |
| P21 | participant stopped after two tasks. | participant stopped after two tasks. | no websites opened | participant stopped after two tasks. |
| **Used Browser** | P1 | participant did not perform this task | participant did not perform this task | participant did not perform this task | participant did not perform this task |
| P2 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P3 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P4 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P5 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P6 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P7 | Google Chrome | Google Chrome | Google Chrome | task was skipped |
| P8 | Google Chrome | Internet explorer/ Google chrome | Google Chrome | Internet explorer/ Google chrome |
| P9 | Google Chrome | Google Chrome | Google Chrome | Google Chrome  |
| P10 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P11 | Google Chrome | Google Chrome  | Google Chrome | Google Chrome |
| P12 | Mozilla Firefox | Mozilla Firefox | Participant skipped this task | Mozilla Firefox |
| P13 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P14 | Google Chrome | Participant skipped this task (he did not trust the website krebsinformationdienst.de) | Participant skipped this task (he/she lost focus) | Internet Explorer (interviewer accidently recommended the internet explorer as a browser) |
| P15 | Mozilla Firefox | Mozilla Firefox | Mozilla Firefox | Mozilla Firefox |
| P16 | Google Chrome | Google Chrome | Participant skipped this task | Google Chrome |
| P17 | Mozilla Firefox | Mozilla Firefox | Mozilla Firefox | Mozilla Firefox |
| P18 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P19 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P20 | Google Chrome | Google Chrome | Google Chrome | Google Chrome |
| P21 | the participant stopped with the study after two tasks. | the participant stopped with the study after two tasks. | Mozilla Firefox | the participant stopped with the study after two tasks. |
| **Comments on the reliability of the website** | P1 |  |  |  |  |
| P2 |  |   |  | after opening ‘lebenmitBrustkrebs.de’ (ed: *name of a website*) “I can't even tell why I'm choosing this….All look the same (ed. Participant looks at the Google search listings). I'm checking out the URLs. I need to feel like this is what I'm looking for.”  |
| P3 |  |  |  | (ed: *The participant was opening a patient forum*): “Because, patient to patient contact. Sometimes it's easier to get something out of it.” |
| P4 |  |  |  | “The internet in general is way too superficial. I read a book to gather information about that (ed: *to get information special cancer related die*t)” |
| P5 |  | “I would not go on dr. web (ed: *name of a website*)or…because there is too much advertising” |  |  |
| P6 |  |  |  | “During my treatment I have always talked to the physicians. I was not looking for help in the internet” |
| P7 |  |  |  |  |
| P8 |  |  | “They want me to buy their books. No I do not want that” (ed: *the participant was on a commercial website*) |  |
| P9 |  |  |  |  |
| P10 |  |  |  |  |
| P11 |  | “If I see the first two results, advertisement.. then it sound like commercial websites to me.” |  |  |
| P12 |  |  |  |  |
| P13 |  |  |  | Website was chosen, because the participant was familiar with the website (“This website is the best known”) |
| P14 |  | Participant: “I don’t think much of this Website” Question: “Which one?” Participant: “Krebsinformationsdienst, there’s too much stupid stuff on it” |  | “I am going on a random website, usually I don’t like to pick the first website” |
| P15 |  | Participant, while reading the search result “Let’s see which one is the most current” |  |  |
| P16 |  |  |  |  |
| P17 |  |  |  |  |
| P18 |  |  |  | “There are no commercial websites (ed: *within the Google search results*). Therefore I feel free to search.” …….”first, I still want to know who the information is from. (opens the impressum)”…..” I personally do not prefer chat forums, because the information is not verified” |
| P19 |  |  |  |  |
| P20 |  |  |  | “ Ecodemy (ed: *name of the website*) that does not ring a bell. Therefore I will go to the next website” |
| P21 |  |  |  |  |
| **Additional comments** | P1 |  |  |  |  |
| P2 |  |  |  |  |
| P3 |  |  |  |  |
| P4 |  |  |  |  |
| P5 |  |  |  |  |
| P6 |  |  |  |  |
| P7 |  |  |  |  |
| P8 |  |  |  |  |
| P9 |  |  |  |  |
| P10 |  |  |  | “ I do not read everything, I only skip to the parts of the website that sound interesting” |
| P11 |  |  |  |  |
| P12 |  |  |  |  |
| P13 |  |  | [P13: ”I always read the headlines and check if there’s something for me, before I read everything”] |  |
| P14 |  |  |  | First comment after opening a commercial website: “First thing I notice is, that this website looks reputable.” |
| P15 |  |  |  |  |
| P16 |  |  |  |  |
| P17 |  |  |  |  |
| P18 |  |  |  |  |
| P19 |  |  |  |  |
| P20 |  |  |  |  |
| P21 |  |  |  |  |

*a Please search the patient guidelines of the German Cancer Society and the German Cancer Aid for your specific type of cancer.*

*b Look for the information sheet of the cancer information service "Cancer on the Internet: Surf safely".*

*c With the help of information from the Internet, please name five possible side effects or syndromes of the cancer therapy (e.g. chemotherapy, radiotherapy, hormone therapy, etc.) that you received.*

*d With the help of information from the Internet, please name possible ways in which you could change your diet in order to promote the healing process and alleviate any side effects that may have occurred.*

**Table 2.** Performance parameters of task execution for tasks 5-8.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Partici-pant**  | **Task 5 a** | **Task 6 b** | **Task 7 c** | **Task 8 d** |
| **Task Completion** | P1 | participant did not perform this task | participant did not perform this task | participant did not perform this task | participant did not perform this task |
| P2 | completed | completed | completed  | completed |
| P3 | completed | not completed | not completed | not completed |
| P4 | not completed | completed | completed | not completed  |
| P5 | completed | not completed | completed | completed |
| P6 | not completed | not completed | not completed (Patient did not open a website) | completed with help |
| P7 | completed | completed | completed | this task was skipped, because the participant was already looking for diet change options in task 4  |
| P8 | not completed | completed with help | completed | not completed |
| P9 | not completed | completed | not completed (Participant believed that there are no side effects of an operation) | not completed |
| P10 | not completed | completed | completed  | completed |
| P11 | not completed | completed | completed | completed |
| P12 | not completed | completed | participant skipped this task | completed |
| P13 | not completed | completed | completed | not completed  |
| P14 | completed | participant skipped this task (he did not trust the website krebsinformationdienst.de) | participant skipped this task (he/she lost focus) | completed |
| P15 | not completed | completed | completed | not completed |
| P16 | not completed | completed | Participant skipped this task | completed |
| P17 | not completed | completed | completed | completed |
| P18 | completed | completed | completed | completed |
| P19 | not completed | completed | not completed  | completed |
| P20 | not completed | completed | completed | not completed |
| P21 | participant stopped after two tasks. | participant stopped after two tasks. | not completed | participant stopped after two tasks. |
| **Time per task (in seconds)** | P1 | participant did not complete this task | participant did not complete this task | participant did not complete this task | participant did not complete this task |
| P2 | 129 | 133 | 304 | 140 |
| P3 | 110 | 325 | 142 | 319 |
| P4 | 124 | 59 | 36 | 96 |
| P5 | 112 | 229 | 456 | 96 |
| P6 | 301 | 123 | 43 | 173 |
| P7 | 217 | 56 | 128 | This task was skipped, because the participant was already looking for diet change options in task 4  |
| P8 | 411 | 746 | 380 | 298 |
| P9 | 126 | 414 | 139 | 112 |
| P10 | 105 | 44 | 529 | 540 |
| P11 | 172 | 98 | 96 | 88 |
| P12 | 278 | 274 | participant skipped this task | 104 |
| P13 | 172 | 61 | 149 | 248 |
| P14 | 194 | participant skipped this task  | Participant skipped this task | 460 |
| P15 | 524 | 187 | 341 | 489 |
| P16 | 161 | 138 | Participant skipped this task | 111 |
| P17 | 63 | 51 | 314 | 247 |
| P18 | 181 | 41 | 224 | 363 |
| P19 | 328 | 149 | 314 | 253 |
| P20 | 262 | 62 | 77 | 91 |
| P21 | the participant stopped after two taks. | the participant stopped after two tasks. | 207 | the participant stopped after two taks. |

*a Please search the patient guidelines of the German Cancer Society and the German Cancer Aid for your specific type of cancer.*

*b Look for the information sheet of the cancer information service "Cancer on the Internet: Surf safely"..*

*c With the help of information from the Internet, please name five possible side effects or syndromes of the cancer therapy (e.g. chemotherapy, radiotherapy, hormone therapy, etc.) that you received.*

*d With the help of information from the Internet, please name possible ways in which you could change your diet in order to promote the healing process and alleviate any side effects that may have occurred.*

**Table 6**. Performance problems that were observed in tasks 5-8.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Task 5 a** | **Task 6 b** | **Task 7 c** | **Task 8 d** |
| **Operating the computer or Internet browser**  |
|  | Operating the keyboard/locating keys | [P4: The participant was typing very slowly with one finger][P6 : The participant was typing very slowly with one finger/ Does not know how to delete letters (backspace/delete)][P13: The participant forgot to use the spacebar while typing][P8: The participant was typing very slowly with one finger] [P12: The participant was typing very slowly ] | [P4: The participant was typing very slowly with one finger][P6: The participant had problems with finding the ‘enter’ key] [P8: The participant was typing very slowly with one finger][P12: The participant was typing very slowly with one finger] | [P4: The participant was typing very slowly with one finger][P6: Had problems with finding the ‘enter’ key][P8: The participant was typing very slowly with one finger][P12: The participant was typing very slowly with one finger] | [P4: The participant was typing very slowly with one finger][P6: The participant had problems with finding the ‘enter’ key] [P8: The participant was typing very slowly with one finger][P12: The participant was typing very slowly with one finger] |
|  | Controlling the mouse/clicking the mouse (e.g. problems with double-clicking) | [P5: The participant was not sure if she has to double click or not, so she double clicks everything] [P6: The participants had problems clicking the “x” to closet a document] [P6: The participant had problems with opening the browser][P8: The participant had problems clicking on the URL bar to start the search/ Does not know when to double click][P12: The participant had problems with opening the internet browser (double click)] | [P3: The participant dos not know how to double click an item][P4: The participant had problems with opening the browser on the desktop (too much time between the two clicks)][P5: The participant had problems with opening the Word document; always starts with a double right click][P6: The participant had problems with opening the browser on the desktop (too much time between the two clicks)]][P8: Participant did not know when to double click “Do I have to do one or two clicks”] | [P3: The participant is not sure whether one or two clicks are sufficient to open a website][P4: The participant is not sure whether one or two klicks are sufficient to open the browser on the website][P13: Participant said before opening task: “Just double-click, yes? Or is one enough?”] | [P3: The participant is unable to click on numbers] [P4: The participant had difficulties opening a browser (too much time between the two clicks)]][P4: „Where is the mouse“] [P5: The participant had problems opening the browser (too much time between the two clicks)]][p6: The participant had problems opening the browser (too much time between the two clicks)]][P8: The participant had problems opening the browser (too much time between the two clicks)]] |
|  | Reading difficulties due to font size |  | [P16: The participant wanted to have the font size of the website increased]  |  |  |
|  | Operating the Internet browser (e.g. the participant is not able to open the browser) |  | [p19: The participant started the search with typing in Google.com in the Google search engine] | [P8: Has problems to leave the website. “How do I go back”. Then closed and reopened the browser][P20: The participant had problems to find the place where he had to type in his search query][P21: The participant opened the browser two times without noticing it] | [P3: The participant closed and reopened the browser to adjust the search query][P3: The participant clicked on a picture instead of a website ][P4: The participant was unable to close the browser. Did not know where to click] |
|  | Closing the web browser after the task and reopening it for the next task | [P2;P3; P4; P5; P6; P7; P8; P9; P11; P12; P13; P14; P15; P16; P20] | [P2;P3; P4; P5; P6; P7; P8; P9; P11; P12; P13; P15; P16; P20] | [P2;P3; P4; P5; P6; P7; P8; P9; P11; P13; P15; P16; P20; P21] | [P2;P3; P4; P5; P6; P8; P9; P11; P12; P13; P14; P15; P16; P20] |
|  | Using the scroll bar | [P6: The participant needs help to scroll a on a website][P15: Participant wanted to scroll back after skipping too much of the page and clicked on the scroll bar, instead of dragging it or using the mouse wheel] | [P8: The participant had problems with scrolling the mouse] |  |  |
|  | Participants with > 1 problem per task | [P6; P8; P12] | [P4; P6; P8] | [P4; P8] | [P4; P3; P6; P8] |
| **Navigation and Orientation** |
|  | Keeping orientation on a website | [P20: The participant did not find the patient guidelines on the website. He/She did not know that she could scroll down on the website] | [P8: The participant spend 40 seconds reading the cookies information of the starting website of the browser] | [P8: The participant had problems with finding the Google search option in the browser] [P8: The participant seemed to be irritated by the starting page of the internet explorer: “This is not where I want to be”] | [P3: Had major problems to find the right information on the prostatakrebs.bps.de website. Was not able to use the headings/ jump marks] [P15: After opening a wrong search result from krebsinformationsdienst.de the participant left the website and clicked on a new link. It lead again to krebsinformationsdienst.de, but not the same page on the website. The new page had the information needed to complete the given task, but since the website (krebsinformationsdienst.de) was the same, the participant thought it was the same, wrong information and left the website.] |
|  | Using and understanding a PDF file | [P5: The participant opened a PDF file when he/she was expecting to open a website] [P8: The participant was unable to open the pdf. File he/she found on the website][P6: It seems that the participant does not know the difference between a pdf file and a browser] |  |  |  |
|  | Using dropdown lists | [P7: The participant was already on the right website for finding the patient guidelines. However he/she did not see or find the dropdown menu on the website] |  |  |  |
|  | Using/ Opening several tabs (i.e. the participant used more than one tab simultaneously for completing the task) | [P13: The participant opened a new tab in the browser][P17: The participant opened two different websites in two different tabs][P18: The participant opened two different patient guidelines in two different tabs][P19: The participant opened a website in a new tab] |  | [P17: The participant opened two different websites from the Google search listings that seem interesting for completing the task][P18: The participant opened 3 different websites from the Google search results that seem interesting for completing the task][P19: The participant opened a website via a new tabs] | [P10: The participant used tabs to open different websites at the same time][P17: The participant opened 3 different websites from the Google search listings that seem interesting for completing the task][P18: The participant opened 3 different websites from the Google search listings that seem interesting for completing the task] [P19: The participant opened a website via a new tabs] |
|  | Participants with > 1 problem per task | None | None | [P8] | None |
| **Utilizing search strategies** |
|  | (Too) broad search query (i.e. the participant only used a single search term) |  | [P2: The participant used only a single search term „krebsinformationsdienst“ ][P11: The participant used only a single search term] |  |  |
|  | Unspecific or non-task related search query | [P3: The participant did not use or define a search term for ‘patient guideline’ in his search query] [P6: The search terms ‘ patient Hamburg’ were not related to the task][P7: The participant did not specify the search with the term cancer][P7: The participant did search ‘patient guidelines’ within the Wikipedia search engine. He/ She did not specify the search for cancer patients.][P8: The participant searched for ‘patient guideline’. However he/she forgot to specify the search for cancer or especially lung cancer. “Now I search lung cancer” (while looking at the search results)][P9: The participant searched for ‘patient guideline’. However he/she forgot to specify the search for cancer or especially lungcancer. “Now I search lung cancer” (while looking at the search results)] | [P3: The participant used search terms that were not appropriate to complete the task][P5: The participant did not use an adequate search query; Maybe the participant forgot what the task was during the search query][P6: The participant used search terms that were not appropriate to complete the task][P8: The search query “lung cancer, now what?” had nothing to do with the task] | [P3: The participant used search terms that were not appropriate to complete the task] [P6: Did search for side effect of any operation for cancer treatment, not for kidney cancer operations] [P11: patient searched for ‘chemotherapy, side effect’. However he/she forgot to specify the search for cancer][p19: The participant forgot to include words like side effects or symptoms in his search query, so he had to adjust his search] | [p8: The search query was too long. The second question inside the search query was grammatically incorrect][P14: The participant searched for ‘bowl inflammation banana’’ (Google „find related searches“) which has little to do with the task] |
|  | Spelling and grammar errors in search query | [P3: Spelling error in search query; The participant did not use the “did you mean” option] [P4: “Richtlinie” instead of “Leitlinie”, The participant ignored the “did you mean” option] [p12: The participant had a spelling error in the search query. He/ She misspelled prostate cancer ][P13: The participant Forgot to use the spacebar while typing; ignoring the “ did you mean” option] [P14: The participant had a spelling error in the search query; ignoring the “did you mean …” option] | [P3: Grammatical errors in the search query][P6: Spelling errors in the search query (kerebs instead of krebs]: did not use the “did you mean” option] [P12: Spelling errors in the search query were not corrected][P16: The participant misspelled Internet (Inzernet) and didn’t use Googles “Did you mean…” option.] | [P13: Typing error. The participant forgets to use the spacebar while typing. Ignoring the “did you mean” option] [P21: The participant misspelled the word colon without noticing her mistake even after not finding appropriate search results] |  |
|  | Unable to adjust the search query | [P6: The participant tried to adjust the search query, but then stopped and opened a websites from the first Google search results.] [P8: The participants tried to adjust the search query, but then stopped and opened a websites from the first Google search results.]  |  | [P21: The participant wanted to adjust the search query, after not finding any search results that are relevant for the task, but he/she did not know how to adjust] |  |
|  | Selection of task-related search results |  | [P5: The participant did not use task related search results, as the participant may have forgotten what the task was][P6: The participant opened a Google search results that was about finding psychological help. Had nothing to do with the task][P8: The participant randomly opened one search results that was non-task related instead of adjusting the search or rereading the task] [P9: The participant went on a website even as McAfee (e.d. computer security software) recommended to skip this site ) | [P5: The participant opened the first hit from the Google listings randomly without looking at the other search results][P6: The participant opened no search results] [P8: The participant opened the first hit from the Google listings randomly without looking at the other search results] [P20: The participant opened the first hit from the Google listings randomly without looking at the other search results] | [P14: The participant chose a website concerning mainly patient with inflammatory bowel disease. Left the first, commercial website to look for another][P15: Picked a website that might have helped him/her to complete the task, confused it with the wrong page he/she opened before and proceeded to leave the website via the “Back” button and clicked on a new search result; this happened again afterwards with a different Google search result, but the same website][P13: The participant found information on how to prevent cancer by a good nutrition instead of information on the diet while cancer treatment] |
|  | Selecting physician instead of patient guidelines | [P4: The participant opened the guidelines for practitioners and not for patients][P9: The participant opened the guidelines for practitioners and not for patients][P10: The participant opened the guidelines for practitioners and not for patients][ P13: The participant opened the guidelines for practitioners and not for patients[P11: The participant opened the guidelines for practitioners and not for patients] [P17: The participant opened the guidelines for practitioners and not for patients][P19: The participant opened the guidelines for practitioners and not for patients][P20: The participant opened the guidelines for practitioners and not for patients] |  |  |  |
|  | Copy the task and paste it into the search terms | [P7: The participant used copy paste for his search query: Patient guideline‘][P11: The participant used copy paste for his search query: ‚Patient guideline‘][P10: The participant used copy paste for his search query: ‘ patient guideline for your specific type of cancer’][P18: The participant used copy paste for his/her search query: ‘patient guideline’][P19: used copy paste for his/her search query: ‘patient guideline prostate cancer’] | [P7: The participant used copy paste for his search query: ‚ Cancer in the Internet: Surf safely’][P11: used copy paste for his/ her search query: ‚ Cancer on the Internet: Surf safely ‘][P10: The participant used copy paste for his/her search query: ‚Cancer on the Internet: Surf safely’][P17: The participant used copy paste for his/her search query: ‚Cancer on the Internet: Surf safely’][P18: The participant used copy paste for his/her search query: ‚Cancer on the Internet: Surf safely’][P19: The participant used copy paste for his/her search query: ‚Cancer on the Internet: Surf safely’] |  | [P19: The participant used copy paste for his/her search query: ‚side effects, healing process’] |
|  | Participants with > 1 problem per task | [P3; P7; P8; P9; P13] | [P6; P8] | [P6] | [P14] |
| **Evaluating relevance and reliability** |
|  | Not checking the source of the information (Only recorded if someone checked it) | [P19: The participant looked at the impressum of the patient guidelines, to see who is behind the guidelines] |  |  | [P19: The participant opened the impressum of the webpage krebsgesellschaft.de to see who is responsible for the information on the website] |
|  | Verified the information they found on one website with information from another website (Only recorded if someone did it) | Not applicable | Not applicable | [P 5: The participant did open a second website to verify the information from the first website][P10: The participant verified all the information he found on at least a second website][P18: The participant looked on a second website in order to confirm the 5 side effects that were already found on the first website] | [P19: The participant verified the information he found with information on another website]  |
|  | Searching in commercial websites |  |  | [P8: The participant opened the Google advertisement tieme.de)[P9: The participant opened the Google advertisement zapmeta.de][P10: The participant searched for information on a commercial website hexal.de | [P13: The participant opened and stayed on commercial website nutricia.de (e.d. they sell nutrition supplements)][P8: The participant opened and stayed on commercial website (gesundheit24.at)][p10: The participant opened the Google ad info-blasenkrebs.de] [P10: The participant searched for information on a commercial website (zentrum-der-gesundheit.de)][P14: The participant opened commercial (ed: marked as Google ad) website ratgeber-darmgesundheit.de, went back to the previous (Google search) page before answering the question] [P15: The participant searched for information on a commercial website (zentrum-der-gesundheit.de)][p18 : The participant opened a commercial website (coloplast.de)] |
|  | Scanning a website for relevant information (i.e. participant opens a website without reading the information on the website and then stops the task thinking that the task is completed) |  | [P12: The participant did not scan the website, participant was confident that the website could answer the question] |  | [P6: The participant did not scan the website, participant said that he/she was confident that the website could answer the question][P12: The participant did not scan the website, participant said that he/she was sure that the website could answer the question] [P9: The participant did not scan the website, participant said that he/she was sure that the website could answer the question][P19: The participant did not scan the website, participant said that he/she was sure that the website could answer the question][P20: The participant did not scan the website, participant said that he/she was sure that the website could answer the question] |
|  | Participants with > 1 problem per task | None | [P12] | [P2; P3; P4; P6; P7; P8; P9; P10; P11; P13; P15; P17; P19; P20;P21] | [P2; P3; P4; P6; P8; P9; P10; P11; P12; P13; P14; P15; P16; P17; P18; P19; P20] |
| **Understanding of the task/Keeping focus**  |
|  | Forgetting task during the operation | [p8: The participant forgot the task and had to reread it, after about 20 seconds] [p10: The participant forgot the task and had to reread it, after about 1 minute][p20: Forgot the task and had to reread it, after about 1 minute] | [P5: Forgot the task right after reading the task, so she had to reread the task] [p6: Participant forgot the task as she ended the search with the sentence “ here is where you can find psychological help” ] [P8: The participant forgot the task (I : “You opened several websites. Do you remember the task”. P8:” no I already forgot that”]  |  |  |
|  | Understanding the task (Even after getting help from the research assistant) | [p6: Participant did not understand that she was given an alternative task and was wondering about similarities of breast and kidney cancer ] | [P5: Not clear if the participant understood the task][p8: This was the first task; Had problems to understand what the task was, after reading it] | [P3: The participant did not understand what ‘possible’ side effects meant. He kept saying I don’t have that symptom][p6: The participant did not understand, that she had to look for possible side effects “ I had no side effects, so I do not have to search for side effects”][p21: The participant did not understand the task, even after a detailed explanation by the researcher] |  |
|  | Keeping focus on the needed information/task (participant gets distracted by other non-task related information) |  | [P3: The participant got distracted by a brochure about “sexuality and cancer”] | [P14. Patient told a long story about taking pharmaceutical drugs for different kind of symptoms] |  |

*a Please search the patient guidelines of the German Cancer Society and the German Cancer Aid for your specific type of cancer.*

*b Look for the information sheet of the cancer information service "Cancer on the Internet: Surf safely".*

*c With the help of information from the Internet, please name five possible side effects or syndromes of the cancer therapy (e.g. chemotherapy, radiotherapy, hormone therapy, etc.) that you received.*

*d With the help of information from the Internet, please name possible ways in which you could change your diet in order to promote the healing process and alleviate any side effects that may have occurred.*