

**HOW DO YOUNG ADULT WOMEN WITH ADHD
EXPERIENCE COGNITIVE LOAD, ORIENTATION, AND
EMOTIONAL RESPONSE WHEN NAVIGATING DIGITAL
INTERFACES OF SWEDISH GOVERNMENTAL
WEBSITES?**

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1. The Use of AI

The use of AI for this paper has been limited to the framing of the research question. Prompts were given to AI for refining and forming question regarding the user experience for young adult women with ADHD, interacting with digital interfaces of governmental websites. AI was not used to generate empirical data, participant responses, or observational findings. All data collection, coding decisions, and theme development were performed by the author.

2. Research Question

The research question is as follows;

How do young adult women with ADHD experience cognitive load, orientation, and emotional response when navigating digital interfaces of Swedish governmental websites (in this case 1177.se)?

The question aims to analyze how the respondents experience cognitive load, how they orient as well as how the emotional response acts out. These phenomena may be found within controlled observation as well as journal keeping and may be analyzed regarding various design implications and concepts.

2.1 Background

Attention-Deficit/Hyperactivity Disorder (ADHD) have mainly been based on male symptom profiles. The emphasis has been on hyperactivity and externally observable behavioral challenges. Today, within the field of ADHD research, there is a shift in how ADHD symptoms present themselves between the genders. The shift points to that ADHD presents itself different in women, namely in terms of symptoms of expression and subjective experience (Young et al., 2020).

Epidemiological and clinical studies shows that women with diagnosed ADHD more likely show internalized symptoms, such as inattention, mental fatigue and strain, emotional dysregulation and a higher level of stress. A problem with the fact that the symptoms vary between the genders is that women often then are diagnosed later in life, leading to forming a higher level of compensatory coping strategies which in turn may create stress in day-to-day life (Quinn & Madhoo, 2014).

This paper and research question aim to build further upon this field of research and to find either support or disagreement towards today's results.

3. Methods

My choice of methods for this paper is focused on observation & capturing information from journal entries, in the form of direct participant observation for a specific artefact (website interaction). The methods are explained below.

3.1 Method: Observation Study

Observation is a qualitative method that aims to generate data through a systematic observation of a phenomenon, such as a person using an artefact under the eyes from a researcher. Unlike regular qualitative interviews which provide personal experience regarding questions and statements, observation data comes via the researcher observing participants in direct action. This creates an opportunity to observe actions, interactions and behaviors in a more direct way (Merriam & Tisdell, 2015).

Importantly, observation becomes a solid research method when it is conducted in a systemic way, guided by a solid research question and become documented through field. This data allows the researcher to capture more than static answers and gives rise to portraying behaviors, actions, pauses and hesitations that regular interviews can't capture.

Observations come in many different forms from highly structured to open and more interpretive and explanatory. Depending on the aim of the study and research question some observations fit better. For example, less structured observations are more suitable for the aim of understanding participants navigation of ill-defined artefacts due to its opportunity for patterns to emerge over time, not being predetermined in advance (Merriam & Tisdell, 2015).

3.1.2 Motivation for using this observation

For the studies aim of investigating how young adult women with ADHD experience the interaction with the digital artefact of 1177.se an observation study is well suited due to it occurring in real time. Merriam & Tisdell (2015) emphasize this, when the study aims to examine activities, behaviors or processes that may be directly observed.

Also, as digital navigation involves decision making, orientation and switching tasks that cannot be accurately reported via self-report alone, observation makes it possible to do a concrete documentation of said interactions.

In addition to this, observation allows researchers to take note of certain aspects of the interactions that may be routine or not known to the participants themselves.

3.1.3 Relation to the research question

The research question at hand focuses on how the experience is for the participant when using governmental digital interfaces (1177.se). Observation supports this experience logging by taking in the different potential difficulties and constraints. By capturing what the participant does rather than what may be reported in hindsight, the observation may contribute data that can complement and contextualize the subjectiveness of the participants' experience. The results may strengthen theories regarding the research question.

3.1.4 Practical Implementation

In this study observation was conducted in a guided way using tasks for the digital interface that the participants were told to do. This was done in a controlled way, where the participant was given a paper with instructions while the observer during the whole process took place a few feet away from the user. The observer did not give any further details or guidelines during the process. In accordance with Merriam & Tisdell (2015) this process is called observer-as-participant, where the observational role was known to the user, but the interaction was only done by the participant.

Field notes were taken during the session as well as directly afterwards. The notes were focused primarily on navigational behaviors as well as pauses, verbal occurrences and emotional reactions. The user was clearly told that no answer or interaction would be given from the researcher.

3.2 Method: Journal Keeping

Journal keeping, also referred to as personal document diary is a qualitative data collection method. This method builds on participants documentation of their experience, reflections and interpretations of certain events over time. In my case this is regarding a digital artefact (governmental website).

When it comes to journal keeping in qualitative research it may provide first-person accounts that give insights into how the individuals perceive their experience (Merriam & Tisdell, 2015). Personal documents, such as journals, are useful for their subjective nature. They can provide meaning and perspectives which can be particularly useful when the area of research concern emotions, perception and personal experiences.

As a qualitative method, it does not aim to produce standards or exact comparative entries across participants, but rather to capture the more personal anecdotes of the participants. The latter part of analysis focuses thereafter on identifying patterns of meaning across entries rather than delving into individual experiences in isolation (Merriam & Tisdell, 2015).

3.2.1 Motivation for using personal document diaries

The method of using a personal diary documentation was chosen as a complement to the observational process and data. This aims to capture the participants subjective experiences when interacting with digital artefacts (in this case 1177.se). Merriam & Tisdell (2015) argues that using personal documents are of particular interest when studying attitudes, emotions and the meaning-making process that may not be observable during, for example, an observational study.

When it comes to ADHD related challenges, it is often experienced internally for the user, especially when it comes to cognitive overload, frustration and emotional fatigue. Using a diary to write down experiences that may not occur in a direct instant but rather over time, can be captured using diary keeping.

Using a diary for collecting data also creates an opportunity to capture vital information that may stretch over several different interactions, moments and contexts. This may reduce the reliance on a single research session, creating stronger, more thorough results than only using observational processes.

3.2.2 Relation to the research question

The research question regarding younger women with ADHD aims to address how cognitive and emotional aspects of user experience may be perceived during usage for governmental websites. Usage of personal document diaries may support this aim by letting the participants describe their experience in their own words, not colored by more direct questions from a researcher.

While observation may capture how the interaction unfolds, diaries may on the other hand provide insight into how the interactions are experienced by participants, making it possible to explore differences between observable behavior and the user's own subjective experience.

3.2.3 Practical Implementation

The participants were asked to keep and write a short reflective diary over several given days. During this time, they were asked to interact with 1177.se. They were further instructed to document experiences for specific tasks. When describing the experience, they were asked to focus on difficulties, emotions and overall experience.

In accordance with Merriam & Tisdell (2015) the data were treated as subjective data of experience in contrast to objective records. The focus was mainly on meaning, perception and interpretation of the user's process and experience.

3.3 Methodological complementarity

When using these two different methods for collecting materials and information it enables methodological triangulation. Merriam & Tisdell (2015) notes that this kind of combination may strengthen the study by providing perspectives for the same kind of phenomenon. By doing so it allows for a more comprehensive understanding instead of what a single method might have led to.

3.4 Method for analyzing: Thematic Analysis

The data collected was analyzed using the method of thematic analysis, using the principle of qualitative data analysis described by Merriam & Tisdell (2015) while also following the "six-phase framework" proposed by Braun and Clarke, elaborated by Ahmed et al. (2025) and Naeem et al. (2023).

Thematic analysis is a flexible qualitative method well suited for identifying, analyzing also interpreting patterns within data sets. The analysis follows the iterative phases; familiarization, generating initial codes, searching and then reviewing themes, defining and naming said themes and finally writing a report.

3.4.1 Analytic Process

During the familiarization and coding phase both observational data and diary entries were partaken in and coded thereafter.

Following this, the codes were compared and clustered into themes. The themes were iteratively reviewed and worked to ensure relevance to the main research question.

3.4.2 Reflexivity

As Ahmed et al. (2025) argues, themes do not simply emerge without being constructed by the researcher. In my case I made sure to keep reflexive awareness through the analysis, keeping in mind that the development of themes involved decisions of interpretation being influenced by my own way of compartmentalizing data.

3.4.3 Participant Selection and Information

Due to time constraints and ethical limitations, only one participant could be drafted for the observational study and journal keeping.

The participant chosen for this observation was a young adult woman with documented ADHD who followed the inclusion criteria, which are:

1. Self-identifies as a younger adult woman
2. Having an ADHD diagnosis OR identifying as having ADHD
3. Having prior experience with digital interfaces and governmental digital services

The participant was informed of the studies purpose, how the data would be handled (in accordance with ethical standards & GDPR) and that they at any time could withdraw their given consent. Consent was captured using an audio recording.

Participant-specific characteristics are not presented further due to confidentiality considerations and the limited sample size.

4. Results & Findings

This section presents excerpts of the study's findings. The results are reported through organized progress from the raw data in the observation log and diary entries, to the initial coding phase shown under the code matrix. Lastly, these findings are interpreted via clustering for sub-themes which then are finalized in main themes. This structure aims to ensure transparency and retrace ability.

4.1 Observation Log Examples

The observation log presents findings from the recorded session. It documents the session participants' behaviors, verbal expressions and their physiological actions during the task completions. Analytic notes have been included to support the later part of the coding process.

Sequence	Observation (descriptive)	Participant utterance	Analytic note
1: Navigate to the website of "1177", then navigate to your page, using the login function. Then see if you have any appointments	Relaxed, sit in a regular position, no apparent divergence.	Silence.	Calm, baseline behaviour .
3: Navigate to and use the websites search function to find information regarding smallpox for children. Find the section where it informs regarding what you can do at home. Find if there are any medicines that should not be used when having smallpox	Participant struggles to find the search bar (not apparent that one needs to be logged out for this). Clear tension. Irritated. Agitated. The longer it takes, the more intense reactions. Foot shakes. Sighs. Ends up existing the site, uses Google to re-enter to find the landing page. Grips table edge hard. <u>Uses</u> finger to read text on screen. Rest head on knuckle. Starts to shake foot again while looking for the information.	"Where is the damn search function?", "What the hell?", "God, there is no search function!", "Where the hell is the damn search bar?", "How am I supposed to find the damn bar?" "Mmm", Speaks under breath: "Has to be <u>Ipren</u> or something", "Mmm", I was correct! It was Ibuprofen!"	Orientational difficulties, cognitive overload, physical <u>expressions</u>, <u>Emotional</u> expression. Desperation results in dramatic choice of action (close and reopen site via Google); <i>Says afterwards that participant was close to quitting session due to this</i>
5: Go back to your main page, and find information about your main instance of care, <u>eg</u> , Your "Vårdcentral", their address and number (if there is any)	Quickly reaches account. Long sigh. Visible tired. Steches , scratches back. Sighs. Foot visibly shakes more. <u>Finds</u> the info.	Does "clicking" sounds with mouth.	Physical expression, cognitive fatigue.
7: Look up your "recept" and find the oldest expired one, then find how to get back to 1177 without using the web browsers search bar or opening a new tab. Then use the logout function and exit the site in any way you want	Searches with visible strait . Leans head on hand. Foot shakes. Grips table edge again while looking around on the page. Finds receipt. <u>Problem</u> arise when trying to go back. Visible frustration. <u>Thinks</u> hard. Irritation. Ends up using "back" function instead of link "hidden" under the hamburger menu. Quickly logs out and ends session.	Whispers under breath: "No. Oh!"	Orientational difficulties, cognitive overload, physical expressions. Thinks "outside the box", using backtrack to exit after a moment of heavy mental workload.

Figure 1: Examples from the Observation Log

4.2 Journal Keeping Diary Extracts

In accordance with Merriam & Tisdell (2015), the diary is a personal document which may capture subjective meanings and lived experiences during a period of journal keeping, rather than what is produced during a session of observation.

Entry #	Context & Task	Diary Extract	Analytic Note
D1	Tried accessing info regarding children's journal status	The site is making me angry every time as it's always hard to go back and forth between pages and instances...	Emotional response, Cognitive load / Orientation / Navigation
D4	Wanted to look up receipts for renewal	I don't understand why it must be separate instances, it feels like a different site.	Orientation / Navigation
D5	Wanted to read about a certain disease and how to go about caring for someone that has it	Finding information without having to access the login page is working well. It's quick and easy if you don't login.	Orientation / Navigation

Figure 2: Journal Diary Extracts

4.3 Code Matrix Example

The code matrix is developed from the observation log. It has been segmented into several different measuring units. The code within this table aims to show recurring occurrences in relation to cognitive load, orientation, emotional responses, strategies and physical stress indicators and in what segment of tasks these reactions occur.

For triangulation, the diary entries were used as complementary material to support and provide context for the themes that were identified using the observation method and thematical analysis.

Sequence	Data extract	Initial code	Domain
1	Relaxed posture, no divergence	Baseline calm	Emotional response
2	Scratches head	Mild uncertainty gesture	Physical stress indicator
2	Sighs	Mild cognitive effort	Cognitive load / Fatigue
3	Uses finger to read text	Guided reading / compensatory strategy	Coping / workaround
3	Rest head on knuckle	Fatigue posture	Cognitive load / Fatigue
4	"Here's that damn search bar at last"	Recognition of feature location	Orientation / Navigation
5	Visible tired	Cognitive fatigue	Cognitive load / Fatigue
6	Sweeps eyes over screen	Scanning behavior	Cognitive load / Fatigue
7	Problem when trying to go back	Exit/navigation barrier	Orientation / Navigation
7	Uses "back" instead of hidden link	Workaround via backtracking	Coping / workaround

Figure 3: Code matrix excerpt: Coded extracts by domain.

4.4 Sub-themes

This table aims to portray the subthemes which came forth from the clustering of the initial codes. These themes represent stable patterns which have been found analyzing the information. Based on these findings, main themes can be created for a final dataset able to be used for comparison to existing theories and research.

Subthemes				
Subtheme A: Search-bar discoverability as a critical breakdown point	Subtheme B: Escalation pattern (calm → agitation → relief)	Subtheme C: Embodied cognitive load (stress visible in the body)	Subtheme D: Compensatory navigation strategies	Subtheme E: Task switching amplifies strain
Supported by: 1. Search function not discoverable 2. Interface-state confusion 3. Frustration about findability 4. Blocked task flow 5. Task abandonment risk	Supported by: 1. Baseline calm 2. Emotional escalation 3. Physiological agitation 4. Stress reactivation 5. Relief after frustration	Supported by: 1. Physiological agitation 2. Table gripping 3. Finger tapping 4. Fatigue posture 5. Cognitive effort gesture	Supported by: 1. External workaround strategy (Google) 2. Workaround via backtracking 3. Guided reading / compensatory strategy 4. Self-talk reasoning	Supported by: 1. Alternates between task guide and website 2. Internal processing 3. Cognitive strain
Most prevalent in sequence: #3	Most prevalent in sequence: #1-4 and during #7	Most prevalent in sequence: #3, #5, #6 & #7	Most prevalent in sequence: #3 and #7	Most prevalent in sequence: #6

Figure 4: Sub-themes created from the Code Matrix

4.5 Main Themes

This table presents the main themes, resulting from the thematic analysis of the observational study. It presents a concrete dataset, based on multiple coded extracts found within the matrix.

Main Themes		
Theme #1: Findability breakdown triggers strong emotional and cognitive escalation	Theme #2: Navigation barriers lead to work around behavior rather than smooth task progression	Theme #3: Cognitive load is embodied and accumulates across tasks
Built by: Subtheme A + B	Built by: Subtheme D + parts of A	Built by: Subtheme C + E
Statement: When a central function (search) is not obvious/easily accessible, an escalation in frustration, cognitive load and risk of interruption is quickly created.	Statement: When navigation does not offer a clear path forward, alternative strategies are activated: backtracking, external search, self-talk.	Statement: Cognitive load is visible in bodily signals and increases over time even when tasks are being solved, suggesting a mental “cost” in the interaction.

Figure 5: Main Themes built by Sub-themes

4.6 Visualization

This figure aims to illustrate the thematic map. The final main themes relationship can be seen and how they interact with each other. It also shows the sub-themes, further providing transparency regarding the structure of the analysis.



Figure 6: Visualization of a thematic map displaying the interconnectedness of phenomenon, themes and sub-themes

5. Discussion and evaluation of the methods

This section discusses and evaluates the different research methods used in this study. It is structured in relation to the research question, practical application compared to literature and alternative methods.

5.1 Method performance in relation to the research question

My research question aims to study how adult women with ADHD experience cognitive load, orientation and emotional responses when navigating and using governmental digital interfaces (in this case 1177.se).

The selected methods in this paper worked well, especially in combination, because of their ability to complement each other, capturing a very natural experience of the participant.

5.1.1 Observation Study

This method worked well regarding studying orientation as real time behaviors and responses. It allowed me to document and observe usage, pauses, hesitations, backtrackings, workarounds, utterances, emotional and physical responses during the process. In accordance with Merriam & Tisdell (2015), this kind of observation for behavior in a certain context provided data that may not have been as easily captured via retrospective data alone.

5.1.2 Journal Keeping

This method worked well as a complementary method for the observation session. Merriam & Tisdell (2015) argues that this method may be valuable for insights of subjective nature of the participant. Diaries may provide information regarding experiences not seen during a controlled observation. In my case, it also acted as a key for triangulation, helping me pinpoint certain interactions as not only occurring during observation but also exists during a longer time span.

5.1.3 Thematic Analysis

This analysis worked well for identifying recurring patterns, producing a transparent way of presenting the collected data and its results. As told by Ahmed et al. (2025) thematic analysis offers a structured and flexible way to identify and interpret patterns in qualitative data studies.

The resulting theme were also aligned with the research questions inherent categories, but the thematic analysis also gave room for unexpected aspects, such as workaround strategies and embodiment of stress triggers.

5.2 Practical Application of methods versus literature descriptions

Merriam & Tisdell (2015) argue that observation as a method requires a systematic process with careful documentation through field notes while also making sure there is a separation between descriptive and reflective comments. The practical use of this method with the structured observation log and analytic notes went hand in hand with the argument for the method.

In accordance with Merriam & Tisdell (2015) regarding journal keeping, diary entries should be treated not as objective accounts but subjective ones that may create meaningful artefacts. A challenge with this method, shared with the observational method, was the limited scope of participants. This generated a limited scope of diary materials. However, even a limited content provided valuable insights into subjective experiences that could be compared to the observational data.

Regarding the thematic analysis, its worked well with the chosen methods. The analytic process with its structured guidance described by Ahmed et al. (2025) as well as step-by-step process shared by Naeem et al. (2023) shows that this method works well in capturing, structuring and contextualizing results in observation and subjective data collection.

5.3 Other methods and alternative approaches

There are other options for methods and alternative approaches that could have been used for this research question.

Semi-structured interviews

Using interviews, the participants subjective experiences could have been insightfully portrayed. In contrast to diary keeping, interviews may produce more consistent data because of the option for the researcher to deep dive certain areas of interest.

Heuristic Evaluation

A more detailed and expert targeted inspectional methods could have been used for working with the interface issues, such as the navigational themes and problems with findability.

This method may have been to provide an action design recommendation but at the same time may not capture the participants lived experience in the same way.

5.4 Evaluation of methods in relation to the results

The observation method showed visible interaction breakdowns and coping strategies that emerged during the session. It contributed to creating specific themes that in turn showed a red thread on which a visualization could be built. It highlighted issues regarding findability, navigational barriers and work around behaviors for the participant. Cognitive load, emotional and physical stress which was caused by these hindrances also emerged during observation and was able to be documented in a thorough way.

Using diary entries, I was able to strengthen the credibility of the analysis in which data mostly was harvested using the observation. The diary, albeit somewhat scarce, did manage to create a triangulation and confirmation on some of the expressed concerns and issues that arose during the observation session.

The thematic analysis provided me with a structured way of integrating all these findings while at the same time managing to create a transparent way of presenting the data collected. By being able to create sub-themes and main themes based on the matrix, the data and results are more easily backtracked and replicated.

However, due to the limited scale of the study, because of the lack in participant numbers and variation, the findings should be viewed as indicative and method-driven rather than statistical results.

All in all, the combination of observation and diary keeping topped by thematic analysis shows great potential in researching this type of research question.

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