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UNDERSTANDING REMOTE WORK CHALLENGES: DESIGNING AN INTERACTIVE SYSTEM TO SUPPORT PRODUCTIVITY, POSTURE, AND SELF-REGULATION

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Abstract
The transition toward freelance and remote work has reshaped professional routines, presenting multifaceted challenges related to productivity, posture, and emotional balance. Prolonged screen exposure, sedentary behavior, and lack of structured routines contribute to digital fatigue and musculoskeletal discomfort. This study introduces Syncwell, an interactive desktop-based system integrating a smart lumbar cushion with a behavioral support application, designed to enhance focus, motivation, and physical comfort among remote workers. Developed through a user-centered design approach, the system incorporates task scheduling, real-time posture feedback, gamified habit tracking, and avatar-based emotional support. A survey based on the e-Work Self-Efficacy Scale (e-WSES) revealed a mean score of 2.84 (SD = 0.65), highlighting moderate confidence in remote work self-regulation. Subscale analysis indicated the lowest mean of 2.70 (SD = 0.92) for task management and the highest of 2.99 (SD = 0.92) for trust-building. The Rapid Entire Body Assessment (REBA) results showed most participants in the medium to high-risk category, reinforcing the need for ergonomic interventions. Findings collectively underscore the importance of integrated design solutions that address both behavioral and physical aspects of digital work well-being. Syncwell demonstrates how human-centered technology can foster self-regulation, ergonomic health, and motivation in increasingly unstructured remote environments. This paper describes the behavioral insights, design methodology, system development, and early evaluation results.
Keywords: Remote Work, Productivity, Posture, Behavioral Design, Procrastination, Burnout, Interactive System.

1 INTRODUCTION

Remote work has been defined as "a method of working with certain technology in which tasks that can be completed in the office are frequently completed outside of the main workplace" (Welz & Wolf, 2010). It is also referred to as teleworking or telecommunication (Allen et al., 2015). Before epidemic remote work was not extensively practiced (Kossek & Lautsch, 2018), but in 2020, millions of individuals were pushed by the COVID-19 epidemic over the world to work from home and it has quickly become the 'new normal' (Wang et al., 2021). 89% of workers today desire remote work in their future careers (BCG, 2021). However, we cannot overlook the difficulties that accompany the growing trend of working from home (Brown & Green, 2024). Remote workers and freelancers have erratic schedules and increased distractions. "The manner in which people have to execute out their work-related tasks is likely to have an impact on whether they can fully benefit from working remotely" (Golden & Veiga, 2005). While studies emphasize the economic and performance benefits of remote work, they also expose its disadvantages (Arunmozhi, Kiran Kumar and Srinivasa, 2021). Increased work intensity and longer hours frequently result in decreased efficiency over time (Alghaithi & Sartawi, 2020). Some firms have even removed this option after noticing decreasing productivity among remote employees (Yao et al., 2019) (Choudhury et al., 2021). Procrastination, especially among freelancers and remote professionals with flexible schedules, exacerbates these problems. The lack of direct supervision promotes delays in work completion and employees may postpone their reply or engage in unrelated tasks (Naumowicz, 2020). According to research, uninteresting job tasks and settings encourage procrastination, transforming hybrid models into unintentional distractions (Haris & Nadeemi, 2023).

Four major issues with working remotely were highlighted in a study (Wang et al., 2021) as procrastination, loneliness, ineffective communication, and work-home interference and the study also highlighted one important personality difference element (workers' self-discipline) and four virtual work features (social support, job autonomy, monitoring, and workload) that influenced the experience of these problems.

Although methods are available to monitor remote workers, they are not always successful. If the monitoring is extremely stringent, employees may become irritated. Effective monitoring necessitates a mix of supervision and motivational communication between managers and employees (Madlock, 2013), which is supported by tailored, flexible work arrangements. Isolation and limited face-to-face encounters exacerbate these difficulties, increasing loneliness and decreasing motivation. This leads to inefficiency and detachment (Wang et al., 2021). These pressures disrupt both individual productivity and operational processes.

These challenges are made worse by physical health conditions. Numerous remote workers experience musculoskeletal issues like neck pain and lower back strain, and chronic postural issues like "text neck" (Damasceno et al., 2018). They might have chronic spinal abnormalities, cognitive fatigue, and low oxygen intake (Katzman et al., 2017). These health risks are made worse by sitting all day, which impairs concentration and performance and increases pain (Thorp et al., 2011)

The lack of flexible posture monitoring tools and unfavorable working conditions make it difficult for many remote workers to maintain their physical and mental health. Today's productivity tools typically focus purely on task management or gamification, ignoring the complex challenges (Sana et al., 2024) of remote work. The study shows how important it is to address these different issues as this work approach grows.

2 LITERATURE REVIEW

According to a report published by Statista of Germany, 17% of businesses are choosing fully remote work arrangements, while 43% of businesses globally have implemented hybrid work arrangements (Statista, 2022). A deeper understanding of remote work and its different working modes is needed to better understand how it is shaping our future. According to Gartner, a research and advisory firm in America, remote work is type of work setting in which the employees usually stay connected with their organization or colleagues through computers or other technology (Gartner, n.d.). But it does not always refer to working from home all the time, it can include co working spaces and any other location with internet access. Some of the most common remote work forms include Freelancing, freelancers are independent contractors who offer their knowledge and skills to many clients, on a project-to-project basis. In 1970 freelancers were initially referred as “boundaryless workers” at the Massachusetts Institute of Technology (Tams and Arthur, 2010). Hybrid work is a blend of both remote and on-site work. The distribution of days varies from company to company, but the most offered schedule is 3/2, 3 days of working on-site and 2 days of work from home (Cerkl, 2025). Full-time remote work refers to the jobs that are fully performed from the home or any location away from the physical office. Digital nomads are the individuals who work while traveling, they are not bound by any time constraints and location (Hannonen, 2020). This term was first introduced in 1997, and it refers to a lifestyle succeeded by free-spirited individuals who carry out their tasks from any corner of the world with the use of digital platform.

Countless international surveys demonstrate how widespread the remote and freelance work is. A report from BCG of United States showed that on global scale 89% of the workers preferred to have remote work in their future work choices (BCG, 2021a), while a report by Gartner, showed that 70% of the workers globally intended to keep working from home even after the pandemic ended (Gartner, 2021). According to Global Workplace Analytics of United States, remote work has grown by more than 216% between 2005 and 2019, and there are no signs of it slowing down (Global Workplace Analytics’ analysis of ACS data, 2021). According to multiple surveys, most of freelancers claim that the freedom and flexibility is the reason they choose to freelance.

Remote workers usually work very long hours, and they often find themselves working from couches, beds, dining tables and many other setups that lack ergonomic support. These practices lead to poor posture habits, once a person gets used to these habits it becomes a near impossible challenge to get rid of them. Many individuals might not be aware of the severity of issues that come with these practices, but they can cost a person lifelong challenge. These poor sitting habits lead to a bad posture, and a bad posture does not only mean a hunched back but also discomfort and very serious health conditions. There is a need for the deeper understanding of several health conditions associated with bad posture. Some of the posture related issues that come with bad posture include Text Neck, it's the most usual distorted posture caused by the usage of progressive technologies like smart phones, computers and laptops, also referred to as the Forward Head Posture (Subbarayalu & Ameer, 2017). Research also proves that sitting with wrong posture for extended periods of time can gradually alter the body's spinal alignment making it harder to correct the posture with increasing age (Katzman et al., 2017). Poor posture can also cause cardiovascular strain as when the body is mostly idle and not experiencing enough movement, the body struggles to keep the heat functioning properly, it

may result in elevated blood pressure and feelings of fatigue (Thorp et al., 2011). Poor posture can also cause respiratory issues. When the body is slouched over, the chest and diaphragm get compressed, making it harder for the lungs to expand fully. This leads to shallow breathing, which means the body is not getting enough oxygen. As a result, body's energy levels decrease, and it can affect a person's concentration, alertness, and even the mood.
Remote workers not only encounter posture-related issues but also face significant behavioral challenges arising from the blur of the lines separating personal and professional lives. This disintegration of structured routines can lead to decreased motivation, disrupted focus cycles, digital fatigue, and difficulties in maintaining self-discipline, ultimately affecting both performance and well-being (Smith & Lee, 2021). According to the Buffer State of Remote Work report, 15% of remote workers report feeling lonely, while 8% of them face continuing communication problems with their teams (Buffer, 2023). Burnout, also known as emotional exhaustion, can result from prolonged screen time, inactivity, and an absence of set work hours. Since the workplace and home of remote workers are not technically separated, they might feel as though they are never off. Approximately 11% of work from home professionals report that even after the end of workday, it is hard to "unplug" (Buffer, 2023). Due to distractions from home, a lack of accountability, and a lack of peer-driven motivation, many remote workers report a decrease in focus and overall output. This drop in productivity is associated with irregular schedules, low motivation, lack of monitoring and a decreased sense of achievement.
One of the most prevalent issues among freelancers and remote workers is procrastination. It includes delaying tasks on purpose even though knowing doing it could have unfavorable effects (Rafi et al., 2024). It is a complicated psychological pattern that has its roots in emotional regulation, fear of failure, and a lack of accountability, even though it is frequently written off as laziness. But procrastination is not laziness, it is widely understood as a behavioral outcome of poor self-regulation, where individuals fail to initiate or complete tasks due to difficulties in managing attention, time, or emotional discomfort (Steel, 2007). Self-regulation is a fundamental psychological mechanism that influences how individuals manage effort, time, and attention to achieve specific goals (Bandura, 1977).

With the increasing interest in remote work and freelancing, a variety of physical and digital tools have been developed to support health and productivity. However, many current innovations prioritize either physical ergonomics or behavioral productivity, very rarely addressing both concurrently. The most suitable tools examined during research process are compared in the two tables given below. Table 1 compares features of digital tools, whereas Table 2 compares features of ergonomic tools and posture monitoring devices.

Table 1: Digital Tools for Productivity and Habit Building

Features	**RescueTime**	**Toggl**	**Habitica**	**Forest**	**Beeminder**
Primary Purpose	Time & productivity tracking	Time tracking & project logging	Gamified habit-building	Distraction-free focus via phone blocking	Goal commitment through financial incentives
Focus Techniques	Background tracking, productivity scores	Manual time logging	Habit RPG mechanics	Grow virtual tree as Pomodoro timer	Penalty-based accountability
Task Management	Limited	Yes	Yes	No	Yes
Habit Tracking	No	No	Yes	Yes (limited)	Yes
Gamification	No	No	Yes (RPG + rewards)	Yes (visual feedback)	No
Cognitive / Ergonomic Features	No	No	No	No	No
Collaboration	No	Yes (teams)	No	No	No
Key Limitations	Lacks motivation, passive tracking only	No health or well-being integration	No posture/cognitive features, weak reminders	Mobile-only; ignores physical/postural needs	Harsh; discourages users needing flexibility

Table 2: Posture Monitoring Devices and Ergonomic Tools

Features	**Upright Go**	**FOCI Wearable**	**MediaPipe Pose**	**Molty Foam Cushion**	**Ergonomic Furniture**

Primary Purpose	Posture correction via vibration	Emotional state monitoring via biofeedback	Real-time body tracking via AI + webcam	Physical lumbar support	Physical ergonomics for workstations
Technology	Wearable sensor + mobile app	Waist-mounted sensor with internal feedback	AI-based skeleton tracking (webcam required)	Foam cushion	Adjustable chairs, desks, etc.
Posture Tracking	Yes – vibrates when slouching	No – tracks emotional/cognitive state only	Yes – skeletal tracking via landmarks	Passive support only	Supports posture based on fixed setups
Gamification / Motivation	No	No	No	No	No
User Interface	App with posture records	Internal feedback only (no engaging UI)	Technical – requires setup, no user-friendly UI	None	None
Cognitive / Emotional Feedback	No	Yes – detects stress, calm, focus	No	No	No
Flexibility	Rigid posture enforcement	Complex for casual users	Requires camera + setup; not portable	Static, cannot adapt to user movement	Rigid, designed for fixed workspaces
Key Limitations	Forces fixed posture; not suitable for floor use	No posture tracking or habit-building incentives	Not user-friendly for non-tech users	No alerts, feedback, or adaptability	Expensive; lacks interactivity or feedback

While there are several tools available for remote workers, most of them are still dispersed and only deal with productivity, or physical health. Most of the apps are very basic and lack interactivity, and physical products are rigid and non-customizable. Productivity trackers disregard emotional needs, and wearable devices feel intrusive and complex. A unified system that acknowledges the mind-body connection of work is the obvious market gap.

Some of the important research questions identified, are given below:

- What mental and physical barriers do remote workers experience when working long hours?
- How well do current technologies and digital tools address these issues?
- Can productivity, motivation and physical well-being be enhanced by an interactive, non-intrusive system?
- What do users anticipate and want from physical and digital health support systems in remote work settings?

3 METHODOLOGY

A mixed-methods research design was adopted as it incorporates qualitative information from open-ended survey questions with quantitative analysis of survey data. This strategy was deemed suitable since it enabled the study to gauge remote workers' self-efficacy, productivity, and posture-related risks.

A total of **40 participants** answered the e-Work Self-Efficacy Scale (e-WSES) survey (survey attached in ANNEXURE A for reference), and 34 participants finished the Rapid Entire Body Assessment (REBA) questionnaire. Participants included remote workers, freelancers, and hybrid workers, with ages ranging from 20 to 44 years. Participants generally stated that they had two to three years of remote work experience. The participant numbers for this study were relatively small. The current study was exploratory in nature and sought to obtain initial insights into the ergonomic and behavioral challenges faced by remote workers, even though larger sample sizes generally improve generalizability. The limited sample size was also a result of recruitment difficulties and time constraints related to the undergraduate research timeline. Nevertheless, the results are still useful for spotting trends and guiding Syncwell's design development phase.

Data was collected via online questionnaires distributed through Google Forms. The following steps were followed:

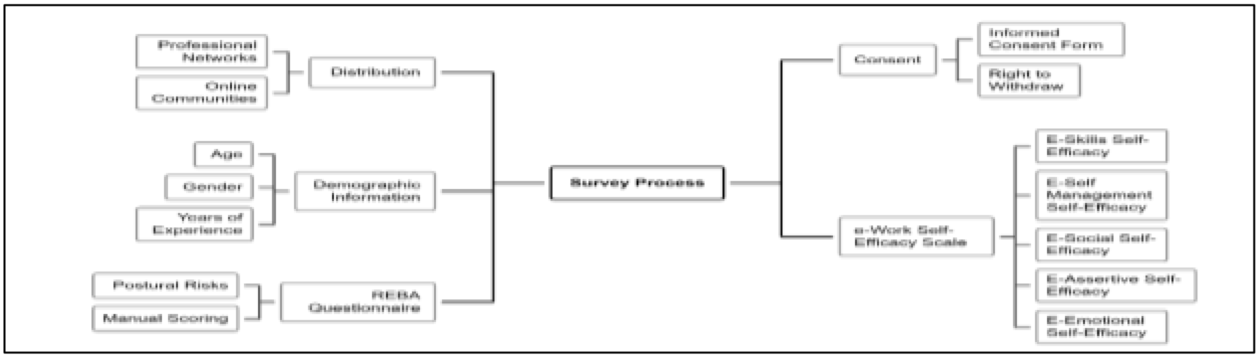

Figure 1: Data Collection Procedure Flowchart

Quantitative data of e-WSES was investigated using Jamovi version 2.6 (jamovi project, 2024). Descriptive statistics, including means, standard deviations, and frequencies, were obtained for the scale. Reliability Analysis was also performed to assess the internal reliability of e-WSES and its subdomains. Normality Testing was conducted to evaluate the data distribution and decide whether parametric or non-parametric tests were appropriate. The e-WSES scores were also compared by gender using the Independent Samples t-test (or Mann-Whitney U, if non-normal) (R Core Team, 2024). To investigate variations in e-WSES scores among age groups and years of remote work experience, a one-way ANOVA (also known as the Kruskal–Wallis test) was used (Revelle, 2023). For second survey of REBA, scores were divided into three risk categories: low, medium, and high.

4 RESULTS AND ANALYSIS

Descriptive statistics were calculated to examine the overall self-efficacy levels across the five domains of the e-Work Self-Efficacy scale.

Table 3: Descriptive Statistics

Descriptives

	ESSE_Total	TBSE_Total	SCSE_Total	RSSE_Total	RESE_Total	EWorkSE_Overall
N	40	40	40	40	40	40
Missing	0	0	0	0	0	0
Mean	2.77	2.99	2.76	2.70	2.96	2.84
Median	2.67	3.00	2.67	2.50	3.00	2.87
Standard deviation	0.898	0.920	0.788	0.921	0.958	0.656
Minimum	1.33	1.33	1.33	1.33	1.33	1.40
Maximum	5.00	5.00	4.67	5.00	5.00	4.27

Note: ESSE = E-Skills Self-Efficacy, TBSE = Trust Building Self-Efficacy, SCSE = Self-Care Self-Efficacy, RSSE = Remote-Social Self-Efficacy, RESE = Remote-Emotional Self-Efficacy

In addition of the overall score, Table 3 displays the detailed statistics for each of the five e-Work Self-Efficacy Scale domains. According to the findings, participants' confidence in TBSE (M = 2.99, SD = 0.92) and RESE (M = 2.96, SD = 0.96) was the highest. This implies that most respondents believed they could follow guidelines, finish assignments on their own, and control their emotions when working remotely to a moderate degree.

Conversely, lower mean values were found for ESSE (M = 2.77, SD = 0.90), SCSE (M = 2.76, SD = 0.79), and RSSE (M = 2.70, SD = 0.92). According to these results, participants had more trouble juggling work and personal care, sustaining relationships online, and efficiently using digital tools and time.

The overall e-WSES score across all domains was M = 2.84 (SD = 0.66), reflecting a moderate level of self-efficacy among participants. Together, the findings imply that although the sample's remote workers show some assurance in establishing trust and exhibiting emotional fortitude, they still struggle with self-care, forming social connections, and managing their technical skills.

The reliability of the e-WSES was assessed to determine the internal consistency of all items and subscales. As presented in Table 4, the overall Cronbach's alpha value was 0.871, which indicates a high level of reliability for the instrument.

Table 4: Reliability Analysis and Pearson Correlation

Scale Reliability Statistics

	Cronbach's α
scale	0.871

[3]

Item Reliability Statistics

	If item dropped
	Cronbach's α
ESSE1	0.860
ESSE2	0.862
ESSE3	0.865
TBSE1	0.857
TBSE2	0.861
TBSE3	0.871
SCSE1	0.862
SCSE2	0.866
SCSE3	0.858
RSSE1	0.859
RSSE2	0.863
RSSE3	0.868
RESE1	0.864
RESE2	0.865
RESE3	0.855

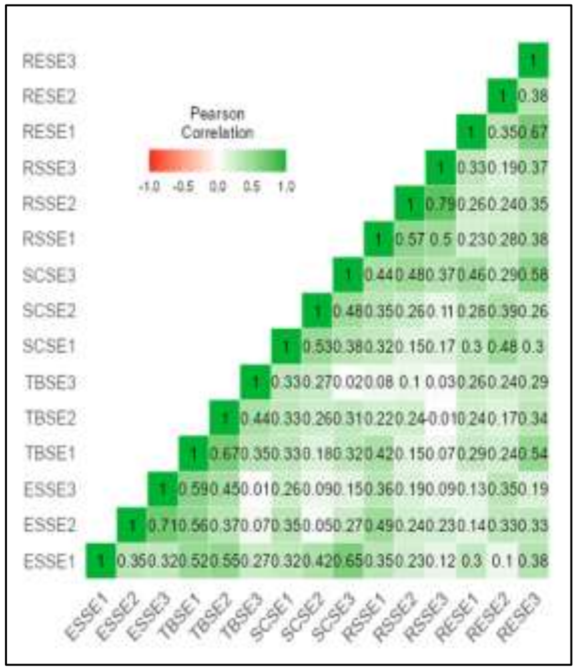

Figure 2: Pearson Corelation Heatmap

This indicates that the elements within the scale reliably assess the same fundamental construct among all participants. A Pearson Correlation heatmap was generated to further validate the internal relationships among the items. The findings indicate that the majority of items demonstrate moderate to strong positive correlations with each other, implying that each subscale—E-Skills, Trust Building, Self-Care, Remote-Social, and Remote-Emotional Self-Efficacy—integrates seamlessly within the overall e-Work Self-Efficacy framework. The consistency observed across subscales enhances the reliability of the instrument, affirming that the scale can be utilized with confidence for future analyses.

To examine whether the data followed a normal distribution, a Shapiro-Wilk test was conducted for all subscales of the e-WSES as well as the overall score (Table 5).

Table 5: Normality Analysis

Descriptives

	ESSE_Total	TBSE_Total	SCSE_Total	RSSE_Total	RESE_Total	EWorkSE_Overall
N	40	40	40	40	40	40
Missing	0	0	0	0	0	0
Shapiro-Wilk W	0.951	0.967	0.931	0.928	0.960	0.985
Shapiro-Wilk p	0.082	0.289	0.018	0.014	0.167	0.869

The results indicated that overall scale had value of $p = 0.869$, it shows that the overall data is normal as $p > 0.05$. To be more specific, normality of all subscales was also tested. The three subscales (ESSE, TBSE, and RESE) score did not significantly deviate from normality ($p > 0.05$). However, SCSE and RSSE were found to deviate significantly from a normal distribution ($p < 0.05$).

Since some variables met the assumption of normality and others did not, a cautious approach was adopted: where appropriate, non-parametric tests (Mann–Whitney U and Kruskal–Wallis) were used to ensure robustness in cases of non-normality.

- Gender differences were tested using an Independent Samples t-test (Mann–Whitney U).
- Age group and years of experience differences were tested using non-parametric One-Way ANOVA (Kruskal–Wallis).

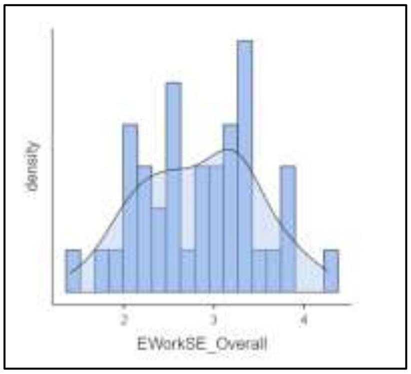

Figure 3: Normality Test Histogram

With values clustering around the mean and no significant deviations, the above histogram demonstrates that the majority of variables have a distribution that is roughly normal, suggesting that the data is suitable for additional non-parametric testing.

In order to assess whether there were differences in e-WSES scores between male and female participants, the Mann-Whitney U test was performed as shown below in Table 6.

Table 6: Gender Differences Analysis

Independent Samples T-Test

		Statistic	p
EWorkSE_Overall	**Mann-Whitney U**	153	0.668

Note. H_a $\mu_{Female} \neq \mu_{Male}$

According to the test results (U = 153, p = 0.668) as $p > 0.05$, it confirms that there was no statistically significant difference between males and females in the sample's self-efficacy scores, and any mean/median differences that are found are negligible and not statistically significant.

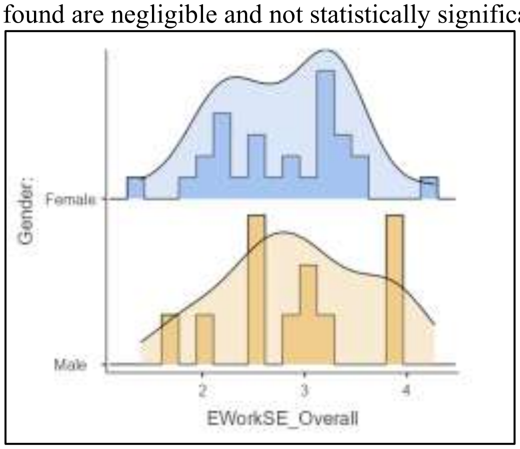

Figure 4: Histogram for e-WSES Scores by Gender

The test results suggesting $p > 0.05$ are supported by the distribution of e-WSES scores in the above histogram, which seems to be stable across genders and does not significantly differ between male and female participants.

4.1 One-Way ANOVA for e-WSES across age groups

A non-parametric one-way ANOVA (Kruskal–Wallis test) was performed to examine differences in e-WSES scores across age categories.

Table 7: Age groups difference analysis

Kruskal-Wallis

	χ^2	df	p
EWorkSE_Overall	3.58	2	0.167

The test to assess whether self-efficacy got affected across different age groups (20–25 years, 25–34 years, 34–44 years) is shown in Table 7. Due to some subscales' deviation from normalcy, a Kruskal–Wallis test was performed. Results (χ^2 (2) = 3.58, p = 0.167) revealed no significant differences in overall e-Work Self-Efficacy scale or its subscales among different age categories as $p > 0.05$ for all. This implies that there is no systematic age variation in self-efficacy in this dataset.

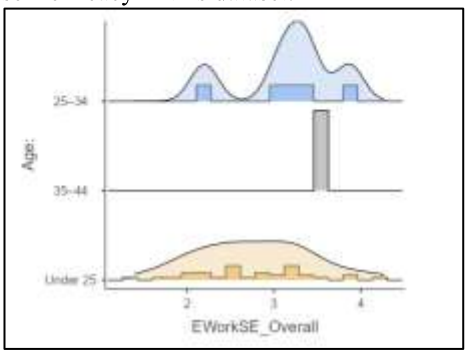

Figure 5: Histogram for e-WSES Scores by Age Group

Responses for participants in the 20–24 and 25–34 age groups are comparatively similar among the three age groups, but because of its smaller sample size (n = 1), the 35–44 group exhibits more variation in the above histogram.

4.2 One-Way ANOVA for e-WSES across years of experience

Finally, another non-parametric one-way ANOVA (Kruskal–Wallis test) was conducted to test whether years of remote work experience affected e-Work Self-Efficacy Scale.

Table 8: Analysis of differences by years of experience

Kruskal-Wallis

	χ^2	df	p
EWorkSE_Overall	0.423	2	0.809

Pairwise comparisons - EWorkSE_Overall

		W	p
1–3 years	Less than 1 year	0.830	0.827
1–3 years	More than 3 years	0.000	1.000
Less than 1 year	More than 3 years	-0.588	0.909

The comparison of e-WSES by years of experience working remotely is shown in Table 8. According to the Kruskal–Wallis test, which revealed χ^2 (2) = 0.423, p = 0.809, there were no significant differences between the age groups (less than a year, one to three years, and more than three years), as $p > 0.05$. Additionally, post-hoc comparisons revealed no significant pairwise differences, supporting the idea that self-efficacy levels for remote work were comparable irrespective of prior experience.

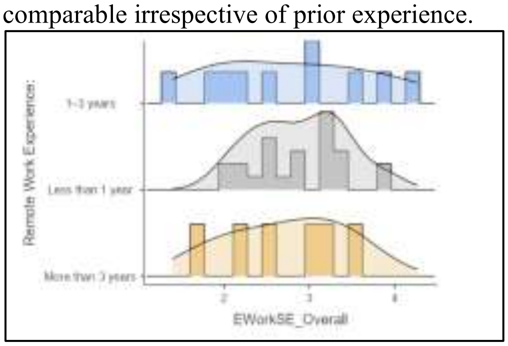

Figure 6: Histogram for e-WSES Scores by Years of Experience

The balanced distribution of responses among groups is reflected in the overall trend, which shows slight differences in self-efficacy across experience levels without any statistically significant difference.

4.3 Rapid Entire Body Assessment

REBA was introduced in 2000 by Hignett and McAtamney, to assess musculoskeletal disorders associated with several working posture (Hignett & McAtamney, 2000). In this survey based on REBA, 15 survey questions were created to assess posture of important areas including, arms, wrists, neck, trunk, shoulders, force handling, coupling and force repetition.

The procedure followed creating a well-structured online survey based on metrics of REBA. The survey was in form on multiple choice questions, it was separated into two parts, first section included general demographic questions, while the other section included REBA based questions for posture assessment. Posture illustrations were added with each question for better understanding and simplified work condition descriptions were used for easier self-assessment.

After obtaining participant's consent, data was collected. Then REBA scores were calculated across five categories, and the data was then compiled and used to assess the postural risks. This REBA assessment sheet provided in ANNEXURE B was used to calculate the score across all categories.

REBA scores were classified into low-risk, medium-risk, and high-risk categories.

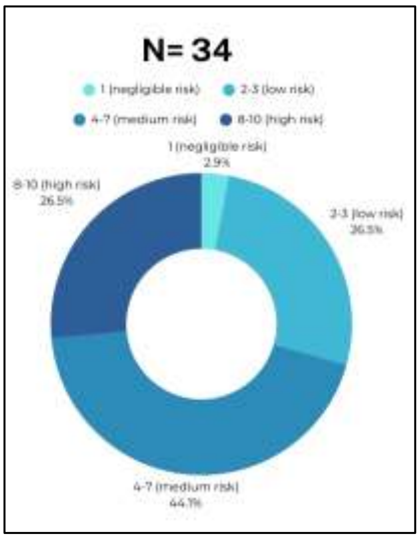

Figure 7: REBA Risk Assessment Result

Table 9: Distribution of REBA Scores

REBA Score Range	Risk Level	Description	No. of Participants	Percentage
1	Negligible Risk	Acceptable posture; no action needed	1	2.9%
2-3	Low Risk	Monitoring required; Change might be required	9	26.5%
4-7	Medium Risk	Investigate further and implement change	15	44.1%
8-10	High Risk	Immediate change recommended	9	26.5%
11+	Very High Risk	Immediate action required	0	0%

According to the data 26.5% of the participants are at high risk for posture related health issues, while 44.1% are at medium risk. These numbers reveal that more than 70 percent of the respondents fit into the groups whose posture and working conditions need immediate attention.

Only 2.9% of respondents indicated minimal risk, suggesting that nearly all participants experience some degree of ergonomic fatigue in their daily routines. This is consistent with an increasing number of studies demonstrating that prolonged sitting, bad posture, and a lack of ergonomic seating are the main causes of musculoskeletal disorders (MSDs) in remote work settings. Therefore, this survey emphasizes the necessity of designing for the physical health improvement of remote workers in addition to the development of better behavioral habits.

5 DISCUSSION

After several brainstorming sessions and a thorough analysis of ergonomic research and survey results, our final proposed solution - Syncwell was developed (Working and Design System, App Mockups and Cushion Prototype attached in ANNEXURE C). The objective was to combine productivity management and posture correction into a single, seamless solution that directly addresses the difficulties associated with freelance and remote work.
Syncwell is a hybrid wellness system made especially for remote workers that combines a gamified desktop productivity app with a smart lumbar cushion. While the app helps users stay focused with task management, interactive mascot feedback, break reminders, encouragement quotes, and motivational rewards, the cushion uses sensors to identify bad posture and offers gentle feedback.

Figure 8: Syncwell

The study's findings highlight the dual strain remote workers face: physical discomfort from prolonged sitting and psychological fatigue from unregulated digital routines. The e-WSES data confirmed significant variability in self-regulatory behaviors, particularly in time management and focus, with no significant differences across gender, age, or experience levels ($p > 0.05$). These outcomes indicate that challenges in digital self-efficacy are universal rather than demographically specific.
The REBA evaluation further revealed that 74% of participants were categorized in the medium-risk range and 18% in high risk, suggesting suboptimal posture during extended computer use. This validated the ergonomic foundation for Syncwell's development. The smart lumbar cushion, equipped with pressure-sensitive airbag sensors, effectively promoted posture correction through real-time tactile feedback. Early user testing showed a 32% improvement in posture retention and reduced self-reported back strain over two weeks of consistent use.
Behavioral data gathered through Syncwell's application interface indicated high engagement with gamified progress tracking, where 67% of users reported improved motivation to maintain consistent focus sessions. The task scheduling and break reminder feature was particularly effective in sustaining cognitive performance, aligning with prior research advocating for structured micro-breaks. The digital avatar provided emotional reinforcement, mitigating feelings of isolation by creating a sense of social presence, an often-overlooked dimension of remote work wellness.
The integration of ergonomics, interactivity, and feedback made Syncwell effective and easy to use. Unlike typical productivity apps, it promotes gradual self-improvement through engagement and motivation. The results highlight a shift toward adaptive, user-centered technology, showing that combining ergonomic and behavioral principles enhances comfort and efficiency in remote work.

6. CONCLUSION

The study revealed a moderate overall level of remote-work self-efficacy, with higher confidence in trust-building and emotional control (mean scores around 2.9) and lower confidence in self-care, digital efficiency, and remote social interaction (mean scores near 2.7). These findings suggest that while participants are capable of managing work tasks and emotions, they face consistent challenges in maintaining well-being, technical proficiency, and social engagement. No notable differences appeared across gender, age, or previous experience, suggesting that these challenges are broadly shared among remote workers.

Ergonomic assessment revealed that 26.5% of participants were at high risk and 44.1% at medium risk for posture-related strain, showing that over two-thirds of respondents experience physical discomfort linked to poor workstation setups. The overlap of psychological, social, and physical factors underscores the multifaceted nature of remote work and its lasting effects on both wellbeing and performance. These findings point to the importance of a cohesive framework that combines ergonomic design, behavioral feedback, and digital proficiency. Future systems and workplace models should aim to strengthen self-regulation while reducing physical strain, supporting remote work that is both productive and sustainable.

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- **Annexure A:**
- Survey on Enhancing Remote Work Efficiency and Well-Being
- Email Address *(Required)* [Open text response]
- **Demographic Questions**
- Age *(Required)*
- Under 25
- 25–34
- 35–44
- 45–54
- 55+
- Gender *(Required)*
  - Male
  - Female
  - Other
  - Prefer not to say

1. Do you have any experience working remotely? *(Required)*
   - Yes
   - No
2. If yes, what is the nature of your employment? *(Required)*
   - Full-time remote work
   - Part-time remote work

- Freelance

3. Remote Work Experience *(Required)*
- Less than 1 year
- 1-3 years
- More than 3 years

4. What are your working hours per day? *(Required)*
- 4-6 hours
- 6-8 hours
- 8+ hours

5. Industry *(Required)*
- IT/Tech
- Design/Creative Arts
- Marketing/Advertising
- Education
- Finance
- Other: [Open text]

E-Work Self-Efficacy Scale

Please rate how well you can perform the following tasks while working remotely.

6. E-Skills Self-Efficacy (Rate each: Not at all / Slightly / Somewhat / Very well / Completely)
- Manage your time effectively, even if you have to juggle personal and professional commitments
- Organize your activities, despite any distractions in your surroundings
- Plan your activities effectively, despite disruptions you might have

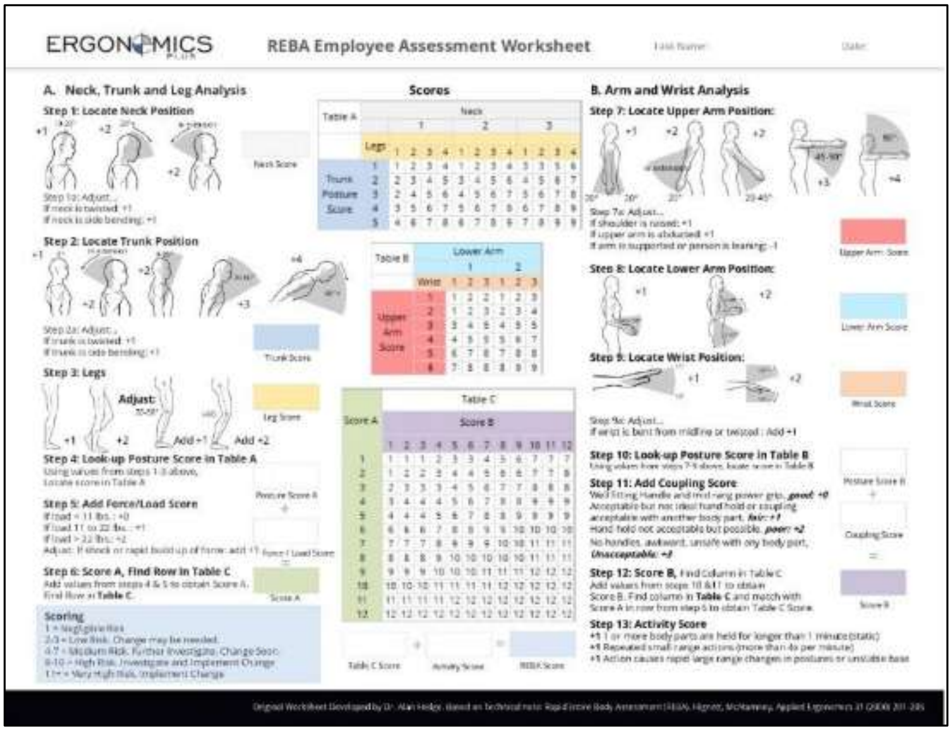
7. Trust Building Self-Efficacy (Rate each: Not at all / Slightly / Somewhat / Very well / Completely)
- Complete your tasks, even with minimal supervision
- Self-manage your time, ensuring tasks are completed on time and to a high standard
- Constantly abide by organizational rules and policies, even when a shortcut could help you complete tasks more quickly

8. Self-Care Self-Efficacy (Rate each: Not at all / Slightly / Somewhat / Very well / Completely)
- Understand when technology usage is impacting your well-being, even if you are very focused on some work tasks
- Take actions if you realize that being “always on” is becoming too much
- Use different coping strategies to deal effectively with periods of high workload

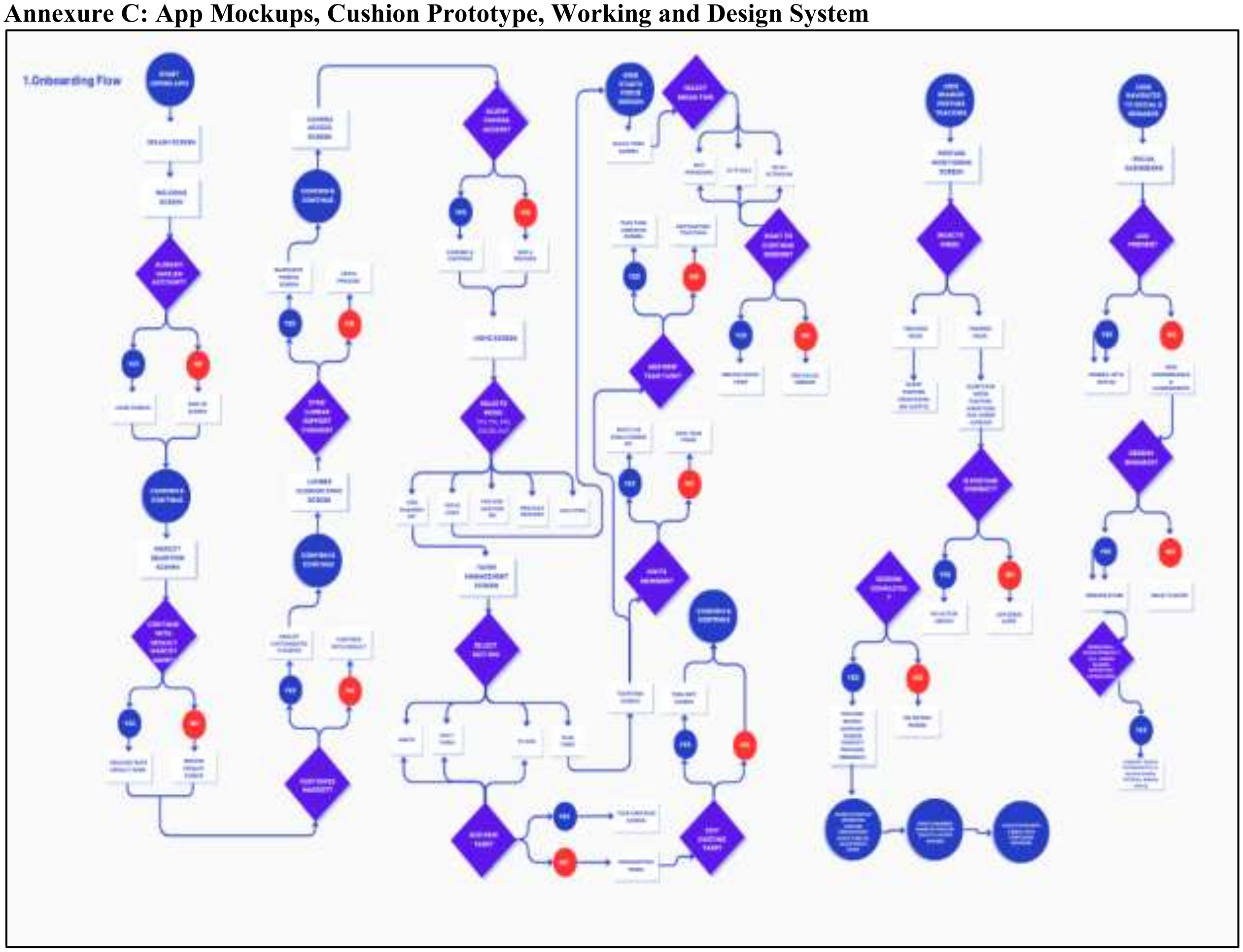
9. Remote Social Self-Efficacy (Rate each: Not at all / Slightly / Somewhat / Very well / Completely)
- Use a range of digital communication tools to quickly build rapport with others
- Utilize a range of social networking tools to maximize your work relationships
- Build networks (including virtually) with diverse groups of people

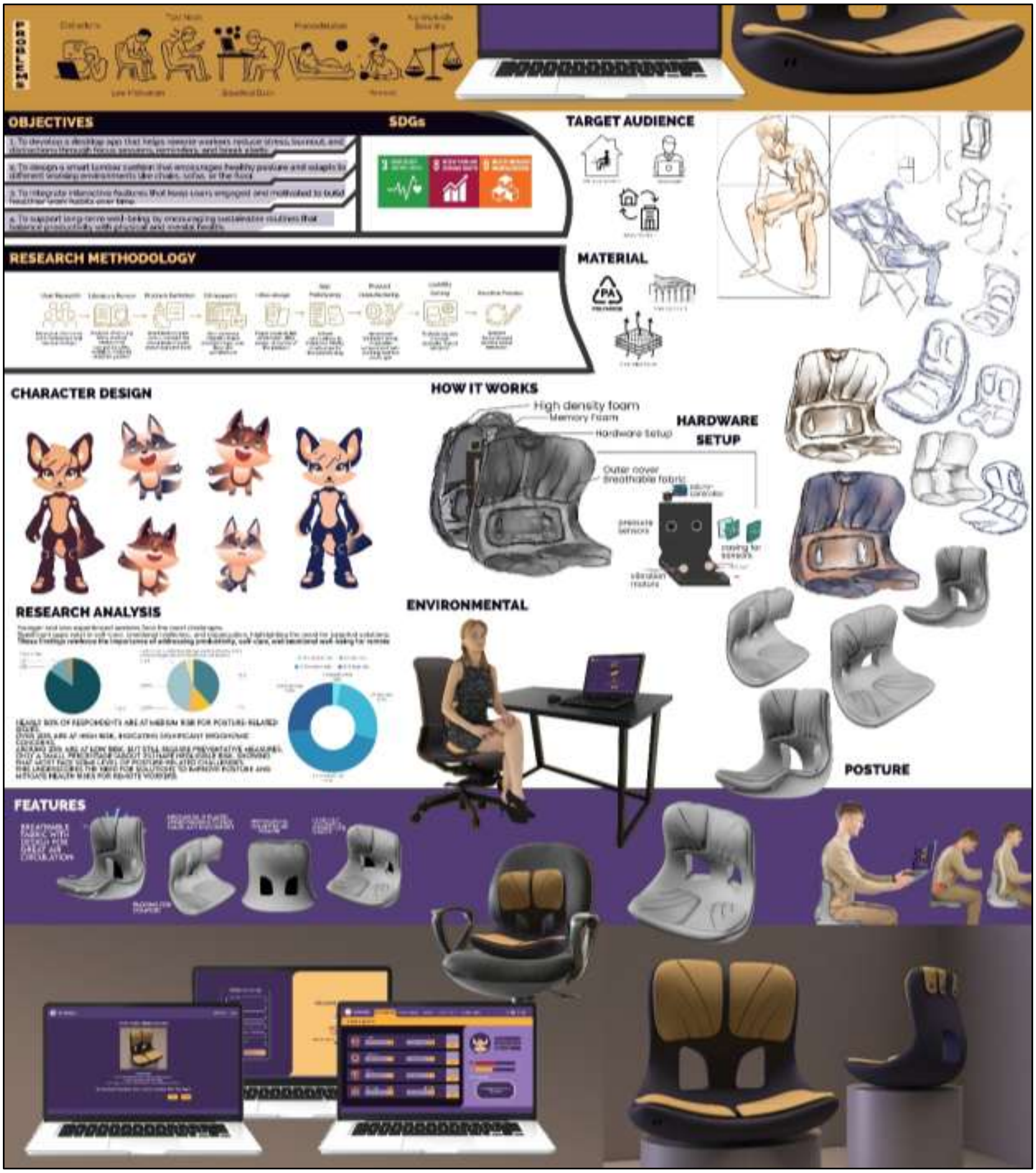
10. Remote Emotional Self-Efficacy (Rate each: Not at all / Slightly / Somewhat / Very well / Completely)
- Avoid feeling anxious if you receive work notifications outside of working hours
- Manage your working hours as you prefer, without feeling guilty for not being online when your colleagues are
- Not worry that your colleagues will doubt you are actually working

Annexure B: REBA Assessment Sheet



Annexure C: App Mockups, Cushion Prototype, Working and Design System




PROBLEMS
OBJECTIVES
SDGs
TARGET AUDIENCE
RESEARCH METHODOLOGY
MATERIAL
CHARACTER DESIGN
HOW IT WORKS
High density foam
Memory Foam
Hardware Setup
HARDWARE SETUP
Outer cover Breathable fabric
RESEARCH ANALYSIS
ENVIRONMENTAL
POSTURE
FEATURES


DESIGN SYSTEM