RJNMSR
Review Journal of Neurological & Medical Sciences Review

Volume 4, Issue 5, 2026

PREVALENCE OF BURNOUT AND PERCEIVED STRESS AMONG HEALTHCARE PROVIDERS IN TELE-REHABILITATION

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DOI: https://doi.org/10.5281/zenodo.20302448

Received	Accepted	Published
24 March 2026	04 May 2026	20 May 2026

ABSTRACT

Background:
Tele-rehabilitation is an emerging mode of healthcare delivery that uses different technologies like telecommunication to provide remote services. It has much benefits but it also presents challenges such as increased workload, technological barriers, and limited patient interaction. These factors can contribute to burnout and perceived stress among healthcare providers. Understanding these issues is essential to ensure provider well-being and quality care of patient.

Objective:
To determine the prevalence of burnout and perceived stress among healthcare providers in tele-rehabilitation.

Methodology:
A cross-sectional study was conducted among 121 healthcare providers. Sampling technique was non-probability convenient sampling. Data collection tools were Burnout Assessment Tool (BAT) and Perceived Stress Scale (PSS). The collected data were analyzed using SPSS version 27. The results presented as mean, standard deviation, frequency, and percentage.

Results:
The findings showed moderate levels of burnout and perceived stress among healthcare providers. Mean BAT scores ranged from 2.58 to 3.17. PSS scores ranged from 2.19 to 2.63. A majority of participants reported experiencing symptoms of stress and burnout sometimes to often, with physical exhaustion and feeling tense being the most prominent issues.

Conclusion:
The study concludes that healthcare providers in tele-rehabilitation experience moderate levels of burnout and perceived stress, which may affect their well-being and work performance. These findings highlight the need for effective stress management strategies and organizational support to improve healthcare outcomes and provider sustainability.

Keywords:
Burnout, Perceived Stress, Tele-rehabilitation, Healthcare Providers, Mental Health, Cross-sectional study.

INTRODUCTION

TeleRehab fell into a broader group of services (ie, telehealth). Telehealth was defined as the use of telecommunication technology to provide health care and health information over a distance. [4] There were numerous studies that had examined stress and burnout among different specialties. The prevalence of burnout among the US physicians was found to be 54%, which was almost twice the prevalence among the general working staff. Among nurses worldwide, a meta-analysis showed prevalence of 11.23% for burnout symptoms. In Saudi Arabia, a cross-sectional study that was conducted on 582 consultants of different specialties revealed that majority of them experienced moderate to high levels of stress.[5] In addition to the factors that contribute to stress and burnout in healthcare providers, mental health professionals might have had additional factors such as the stigma attached to the mental health, exposure to negative emotions or traumatic experiences, dealing with unstable patients or patients with suicidal thoughts, and the long time spent in documentation. [5]

The symptoms of burnout observed among healthcare professionals included emotional exhaustion, the dehumanization of interpersonal relationships, and loss of motivation or loss of self-fulfilment. Dehumanization referred to the loss of one's sense of what it meant to be human and might have been characterised by lacking emotions, warmth, and flexibility as well as treating patients and colleagues as immature, unintelligent, uncivilized, or irrational. Other common symptoms include chronic exhaustion, reduced performance, and alienation from work activities. [6] Chronic overstress often resulted in a state of burnout.6 Emotional illnesses could lead to anxiety disorders, addictions, depression, eating disorders, and suicide. A recent study conducted at Mayo Clinic revealed that 60% of American physicians at times suffered symptoms of fatigue and depression, otherwise known as "burnout. [7]

Providing TR services faced many challenges and obstacles. One of the most important clinical challenges was to determine how we could connect TR technology to a specific clinical environment and specific service. The possibility of abusing patients' information and patient's negative attitude towards this approach was another challenge. Other challenges mentioned in the previous study in different world places included: Entering incorrect clinical information, issues related to reimbursement and insurance policies, the need for therapists with licenses, uncertainty in the personnel's responsibility, inability to use technology in low-income communities, the resistance of people to use this new method, wide variety of disabilities and the need for various technologies for each of them, lack of specialized services for people with special rehabilitation needs, lack of clarity about its impact, difficulty in managing and keeping a high amount of information resulting from the rehabilitation process, the lack of a specific administer and leadership, and the problems related to how to treat patients according to each countries law. [8]

The significance of prevalence of burnout and perceived stress among healthcare providers working in telerehabilitation, an increasingly applied mode of care, was recognized. By realizing these challenges was necessary for safeguarding healthcare provider well-being and maintaining quality of patient care. These would aid the organizational policies, working load management, and use of interventions to enhance sustainable and effective practices of telerehabilitation.

LITERATURE REVIEW

Khalid et al., 2025 investigated the existence of burnout and emotional exhaustion among remote and hybrid workers in the technology sector, education and finance and found independent organisational and psychological predictors of high emotional exhaustion. The study was a cross-sectional observational study between January and April 2025 that involved recruiting 247 remote and hybrid workers via professional networks and working platforms. The Maslach Burnout Inventory-Human Services Survey was used to measure burnout. Validated Likert-scale questions were used to measure psychosocial factors. It was mentioned in results that fully remote workers had significantly higher emotional exhaustion then hybrid workers and was strongly driven by

blurred boundaries, extended hours, and isolation. The limitation of this study was that there was no properly validated way to measure how remote or hybrid work effected mental health. [9]

Noor et al., 2024 described the work in this research Paper as focusing on prevalence of burnout in Physical therapy house officers working in hospitals of Rawalpindi and Islamabad with the sample size of 161 by using Maslach Burnout Inventory Human Services Survey. The selection of participants was done by purposive method of sampling. Conclusion of this research paper was that physical therapists working in Rawalpindi and Islamabad were at high risk of developing burnout because of hectic routines and of reason that they were not being paid for their work. The limitation in research manuscript was focusing on recent graduates working as unpaid house officers. [10]

Chupanich et al., 2024 studied this cross-sectional study which examined stress and its associated risk factors among healthcare personnel in northeast Thailand after the COVID-19 pandemic. This was conducted between January and April 2023 in Chaiyaphum province. Healthcare workers from primary, secondary, and tertiary hospitals across 16 districts were collected using questionnaires, including the Stress Test–5 (ST-5).They stated that the factors which were associated with higher stress levels were job position, work environment, personal characteristics, responsibility for caring for family members, and prior experience of COVID-19 quarantine. It described the need for on time professional mental health support for severely affected staff. In addition, self-reported questionnaires were used to measure stress, and this could have been prone to reporting and recollection bias.[11]

This study was demonstrated by Irfan et al., 2023 that explored burnout in healthcare professionals in Karachi, Pakistan, with the aim of examining work-related stress, and its influence on professional well-being. Burnout was assessed through three key dimensions: occupational exhaustion, loss of empathy (depersonalization), and personal accomplishment. It was a cross sectional study. Sample size was 377. Staff in various hospital sectors was taken on board. The Maslach Burnout Inventory was used to collect data and analyzed using the SPSS software. Mean scores indicated moderate overall burnout among participants. It was established that high levels of severe occupational and healthcare professionals exist and that the gender, experience and the hospital sector significantly impacted the levels of occupational exhaustion, loss of empathy, and personal accomplishment. In general, the study brought up burnout as a severe issue among healthcare workers and the necessity of specific interventions to address the issue and improve the quality of care and mental well-being. [12]

Wajeeha et al., 2021 established the prevalence of burnout syndrome in healthcare providers and its correlation with gender and work set up in government and privately owned hospitals. Convenient sampling was used for sampling and Maslach Burnout Inventory (BMI) was used for burnout assessment. Males had emotional exhaustion and cynicism burnout more comparatively to females, while females had more professional proficiency burnout. Burnout levels among health care providers working in private hospitals were recorded more. This study deducts that the cynicism and professional proficiency were significantly more than the emotional proficiency. The professional proficiency was much affected by gender and work set up while the emotional proficiency was related to the work set up. [13]

Aloyuni et al., 2020 explored the physiotherapist's knowledge, attitudes and barriers towards telerehabilitation in Saudi Arabia. Despite of being a vulnerable tool in telemedicine, it was used in physical therapy department is still limited. There were 347 respondents, more than half of them were informed of having appropriate knowledge about telerehabilitation, but the institutions did not have enough telerehabilitation resources and implementation. Among image based, sensor based and virtual reality, image based TR was used most frequently. Major barriers to use of rehabilitation were technical complication, less number of available staff and expenses. This study inferred that despite of having enough telerehabilitation knowledge, it was difficult to utilize it in physical therapy due to poor framework and financial restrictions. [14]

2.1: Objective
This study aimed at establishing the occurrence of burnout and perceived stress among healthcare providers in tele-rehabilitation.

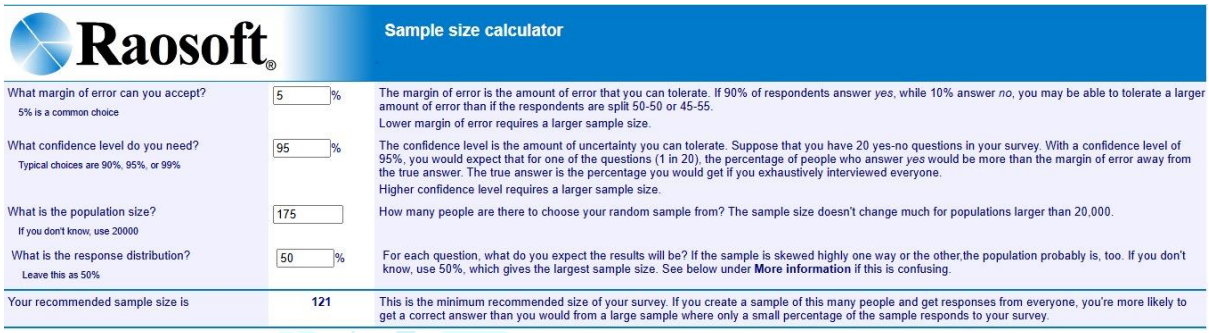
2.2: Hypothesis
2.2.1: Alternate Hypothesis:
There was significant prevalence of burnout and perceived stress among healthcare providers in tele-rehabilitation.
2.2.2: Null Hypothesis:
There was no significant prevalence of burnout and perceived stress among healthcare providers in tele-rehabilitation.

METHODS AND MATERIALS
3.1: Study Design:
The study design was Cross-sectional.

3.2: Study Setting:
The study setting was held at Punjab, Pakistan.

3.3: Duration of Study:
The study duration was 6 months after approval of synopsis.

3.4: Sample size:
The sample size was 121 calculated by Raosoft. [6]



3.5: Sampling Technique:
The sampling technique was non-probability convenient sampling technique.

3.6: Sample Selection:
3.6.1: Inclusion Criteria:
- Both genders [15]
- Aged 24 years or older [15]
- Doctors, nurses and allied health professionals, working as fulltime employees [6]
- Voluntary participation [16]
- Work experience of 6 months and above [17]

3.6.2: Exclusion Criteria:
- Interns, students, and health care staff on annual leave are suffering from serious illness [15]
- The individuals with the family history of stress and anxiety or they were on psychotic drugs [13]

3.7: Data Collection Tools:
- Burnout Assessment Tool (BAT)
- Perceived Stress Scale (PSS)

3.7.1: Burnout Assessment Tool:
Data was collected using Burnout Assessment Tool (BAT) proposed by Schaufeli (2020). BAT was initially proposed with 33 items. BAT-S was the proposed 33-item version with four core dimensions and two secondary dimensions. The average score for each dimension was calculated and interpreted as given by Schaufeli in user manual for BAT-S. [16]

Scoring:
1 = Never
2 = Rarely
3 = Sometimes
4 = Often
5 = Always

3.7.2: Perceived Stress Scale:
PSS is a 14-item questionnaire that is used to define the amount of stress that professionals are undergoing. The rating is done on a 5-point scale, i.e. 0 (never), 1,2,3,4 (very often).[5]

Scoring:
0 = Never
1 = Almost Never
2 = Sometimes
3 = Fairly Often

4 = Very Often

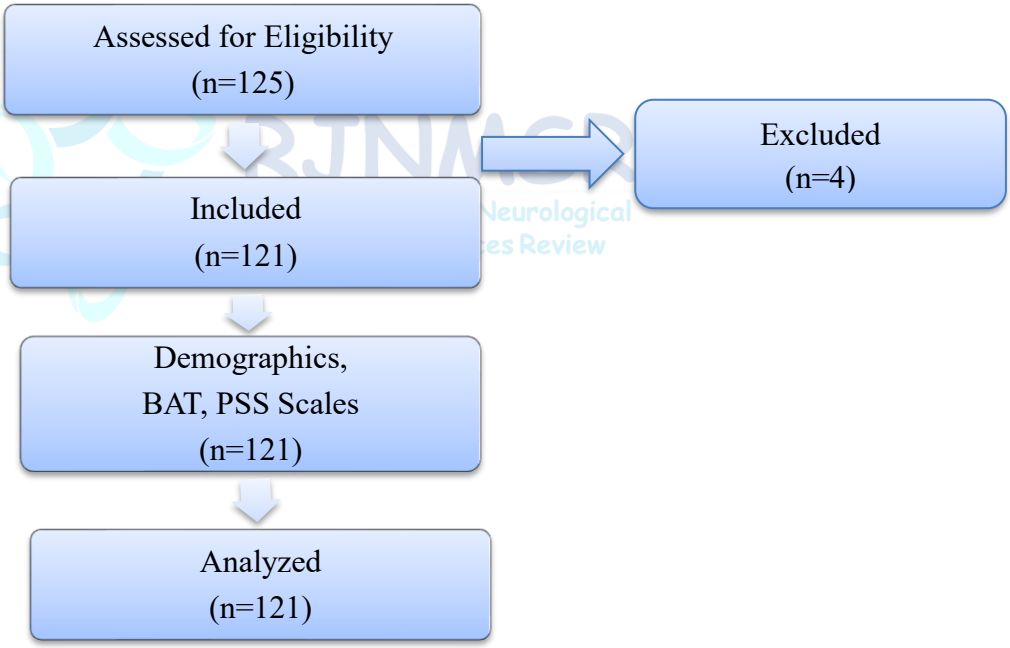
3.8: Data Collection Procedure:

The subject who meets the inclusion criteria was included in this study. The nature and purpose of study along with questionnaires were explained to each and every subject. Consent was taken and BAT questionnaire was performed to confirm the burnout levels, as it was clinically validated approach that specifically addresses the cognitive and emotionally impairment. The PSS was used for stress measuring is excellent due to its general nature, strong reliability and solid validity. After this, data were filled, analyzed and interpreted accordingly.

3.9: Ethical Considerations

1. The rights of the research participants were protected, and the ethical guidelines established by the GCUF Layyah ethical committee were adhered to.
2. All participants were required to sign written informed consent forms, which are attached.
3. All data collecting information was kept private.
4. All study participants will remain anonymous.
5. The participants were made aware that there was no danger or drawbacks to the study's methodology.
6. Participants were made aware that they were free to leave the study at any time.

3.10: Consort Flow Diagram



3.11: Data Analysis Procedure:

Data were analyzed by using the Statistical Package for Social Science Software (SPSS) version 27.0 for window Microsoft, also Microsoft word and excel were used to generate graphs, tables etc. The quantitative data were presented in the form of mean and standard deviation. The categorical data were presented in the form of frequency and percentage.

RESULTS

4.1. Sociodemographic

Demographics	Age	Gender	Marital status	Profession	Duration of tele-	Work Setting

					rehabilitation practice	
Mean	39.3471	1.4793	1.6354	1.7273	1.6446	1.9174
SD	9.39300	.50165	.91287	.78528	.48062	.85232

Table 4.1 shows the mean and standard deviation of sociodemographic including age, gender, marital status, profession, duration of tele-rehabilitation practice and work setting. The mean age in the study was 39.3471 and standard deviation was 9.39300. Gender statistics shows mean of 1.4793 and standard deviation of .50165. Marital status shows mean of 1.6354 and standard deviation was .91287. Profession statistics shows mean of 1.7273 and standard deviation was .78528. The statistical values of duration of tele-rehabilitation practice shows mean of 1.6446 and standard deviation was .48062. Work setting shows mean of 1.9174 and standard deviation was .85232.

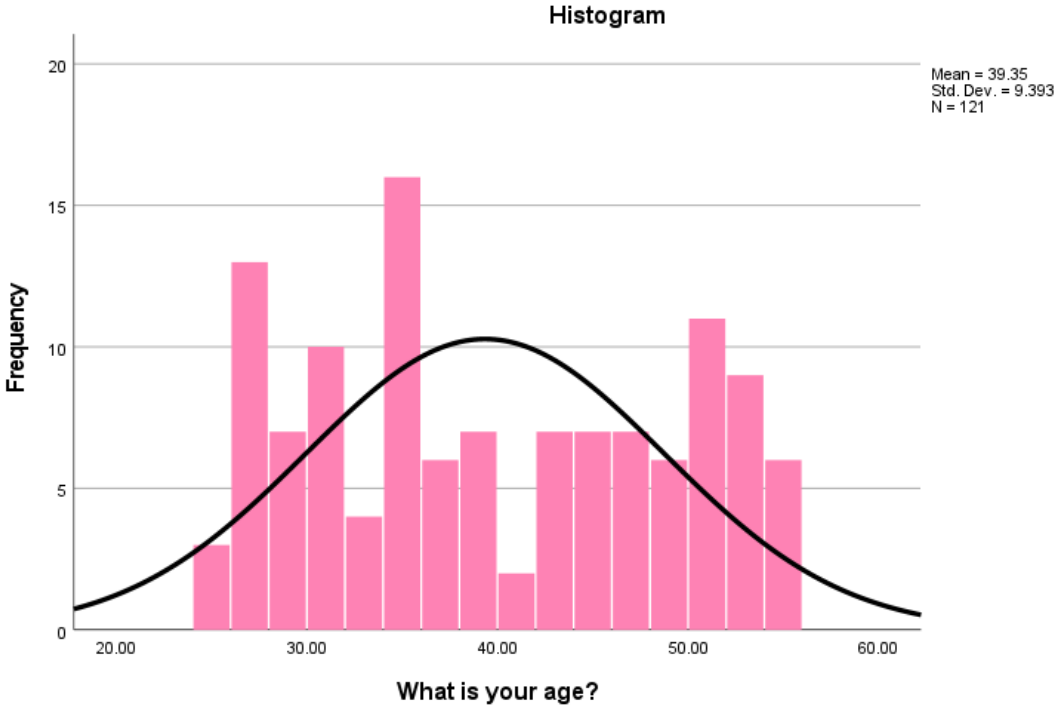


Fig. 4.1: Histogram of age statistics

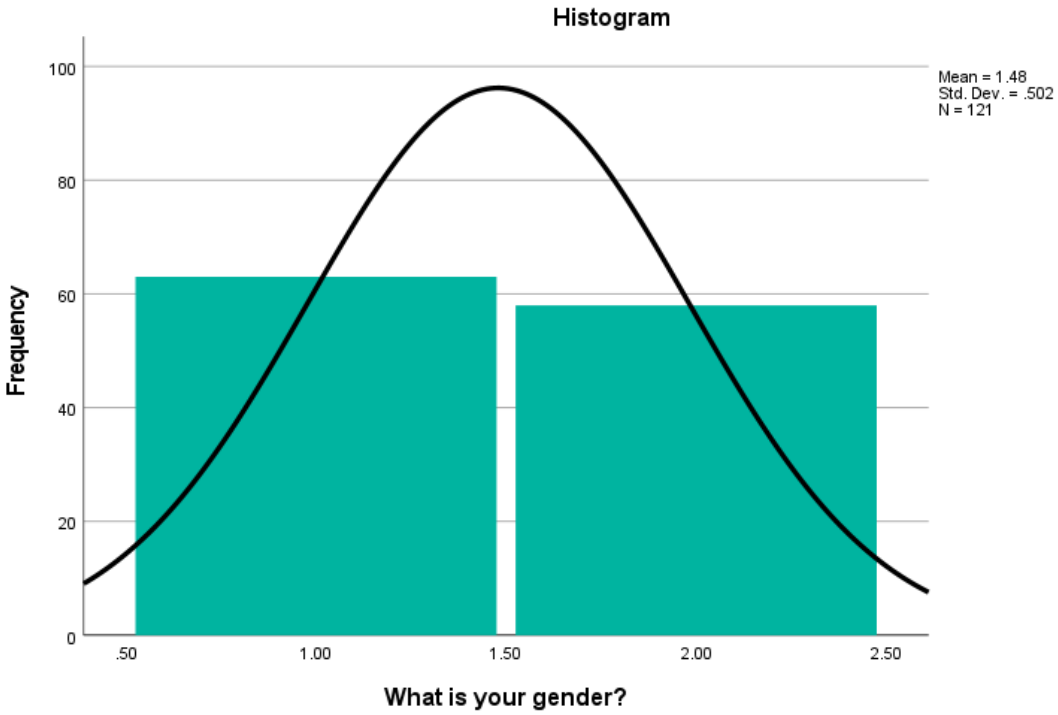


Fig. 4.2: Histogram of gender statistics

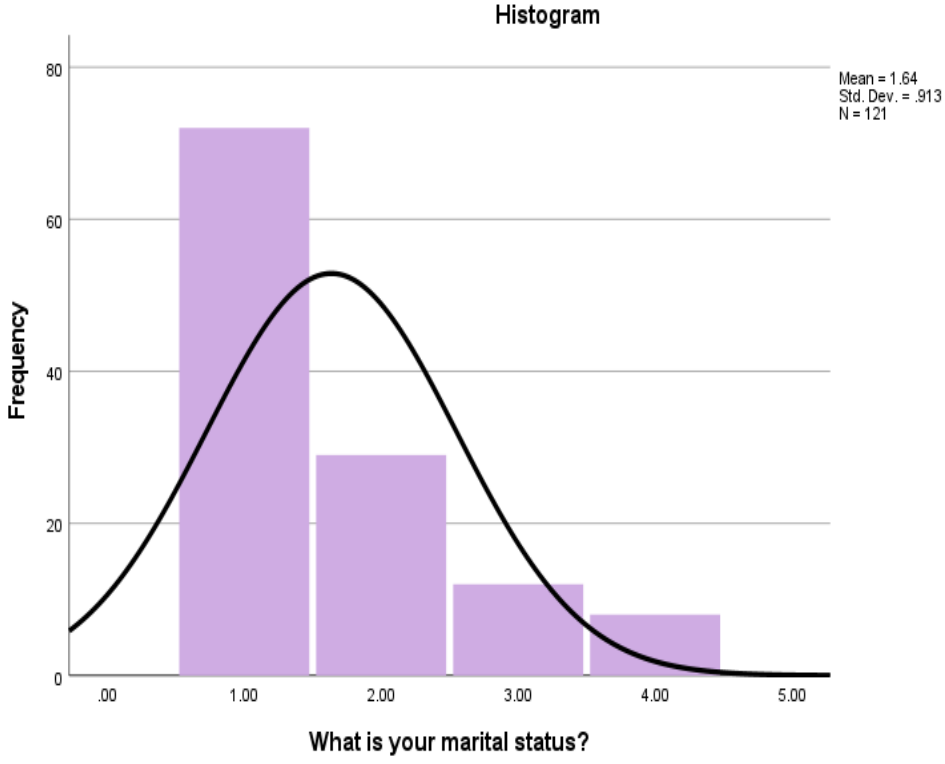


Fig. 4.3: Histogram of Marital Status

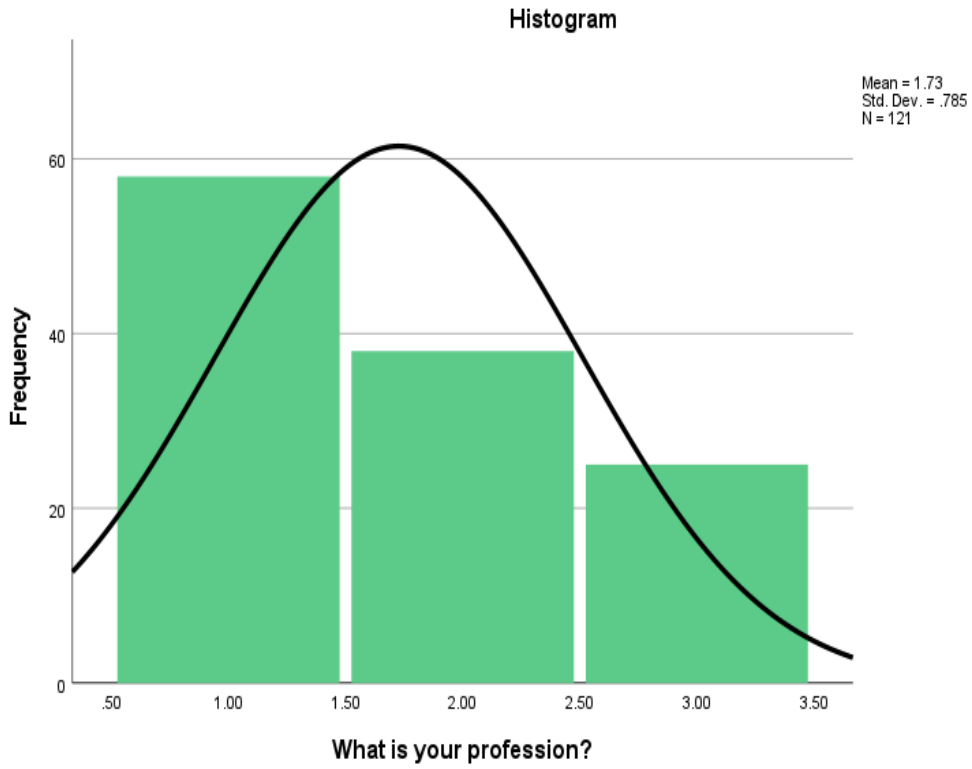


Fig. 4.4: Histogram of Profession

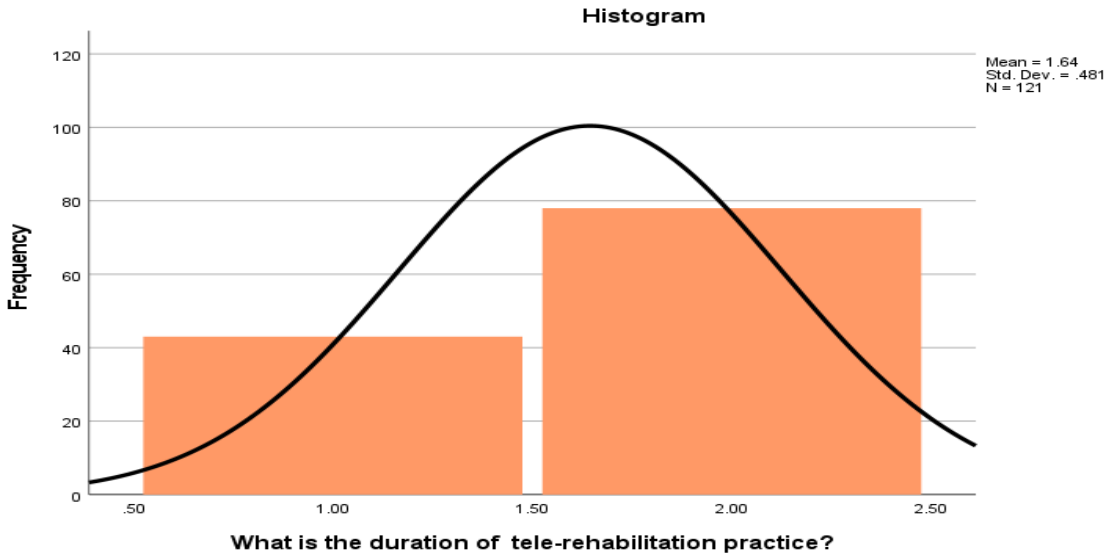


Fig. 4.5: Histogram of Duration of tele-rehabilitation practice

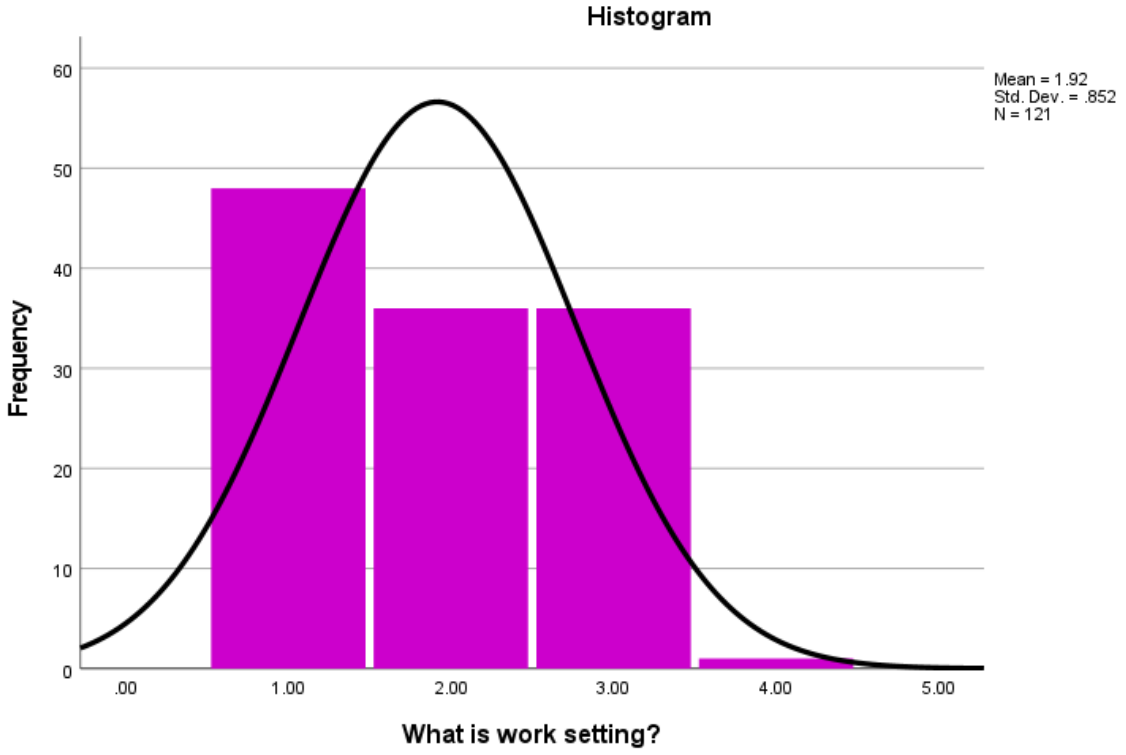


Fig. 4.6: Histogram of Work Setting

4.2. Descriptive statistics of Age

	Frequency	Percent	Valid Percent	Cumulative Percent
25.00	3	2.5	2.5	2.5
26.00	5	4.1	4.1	6.6
27.00	8	6.6	6.6	13.2
28.00	3	2.5	2.5	15.7
29.00	4	3.3	3.3	19.0
30.00	6	5.0	5.0	24.0
31.00	4	3.3	3.3	27.3
32.00	3	2.5	2.5	29.8
33.00	1	.8	.8	30.6
34.00	12	9.9	9.9	40.5
35.00	4	3.3	3.3	43.8
36.00	2	1.7	1.7	45.8
37.00	4	3.3	3.3	48.8
38.00	2	1.7	1.7	50.4
39.00	5	4.1	4.1	54.5
40.00	2	1.7	1.7	56.2
42.00	2	1.7	1.7	57.9
43.00	5	4.1	4.1	62.0
44.00	1	.8	.8	62.8
45.00	6	5.0	5.0	67.8

46.00	4	3.3	3.3	71.1
47.00	3	2.5	2.5	73.6
48.00	3	2.5	2.5	76.0
49.00	3	2.5	2.5	78.5
50.00	5	4.1	4.1	82.6
51.00	6	5.0	5.0	87.6
52.00	3	2.5	2.5	90.1
53.00	6	5.0	5.0	95.0
54.00	1	.8	.8	95.9
55.00	5	4.1	4.1	100.0
Total	121	100.0	100.0	

A total of 121 interviewee participated in the study, with ages ranging from 25 to 55 years. The major proportion of respondents was aged 34 years (9.9%), and the distribution shows that most participants fall within the 25–45 years age bracket. Overall, the data shows a justly broad but somewhat concentrated age distribution among young and middle-aged adults.

4.3. Descriptive statistics of Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	63	52.1	52.1	52.1
Female	58	47.9	47.9	100.0
Total	121	100.0	100.0	

Table 4.3 shows the statistics of frequency and percentage of gender distribution. A total number 121 Doctors, Nurses and Allied Health Professionals participated of which 63 (52.1%) were male and 58 (47.9%) were female.

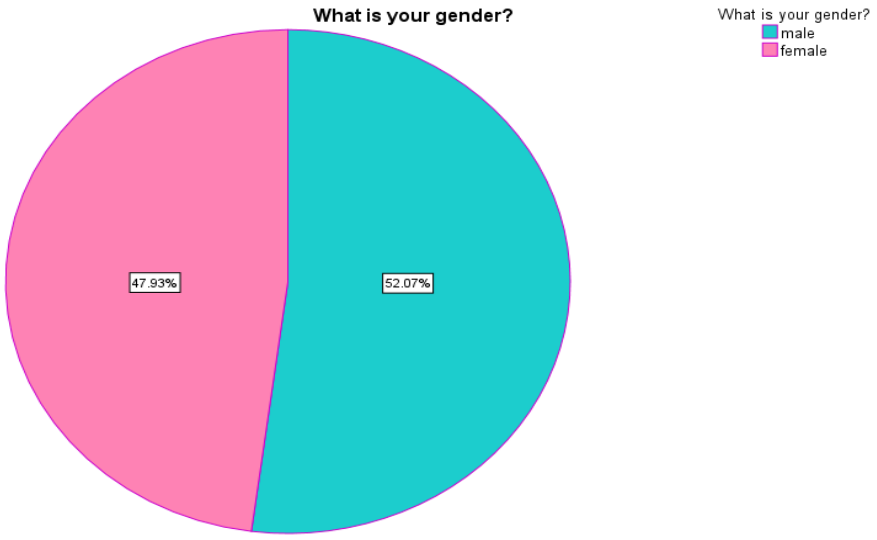


Fig 4.7: Descriptive statistics of Gender

4.4. Descriptive statistics of Marital Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Married	72	59.5	59.5	59.5
Unmarried	29	24.0	24.0	83.5
Divorced	12	9.9	9.9	93.4
Widowed	8	6.6	6.6	100.0
Total	121	100.0	100.0	

Table 4.4 demonstrates that the major portion of the sample which is 59.5% of respondents is married, 24% of respondents are unmarried, whereas as the respondents who are divorced, widowed present. Smaller proportion at 9.9% and 6.6% respectively. Overall, the shows that the majority of the participants are married.

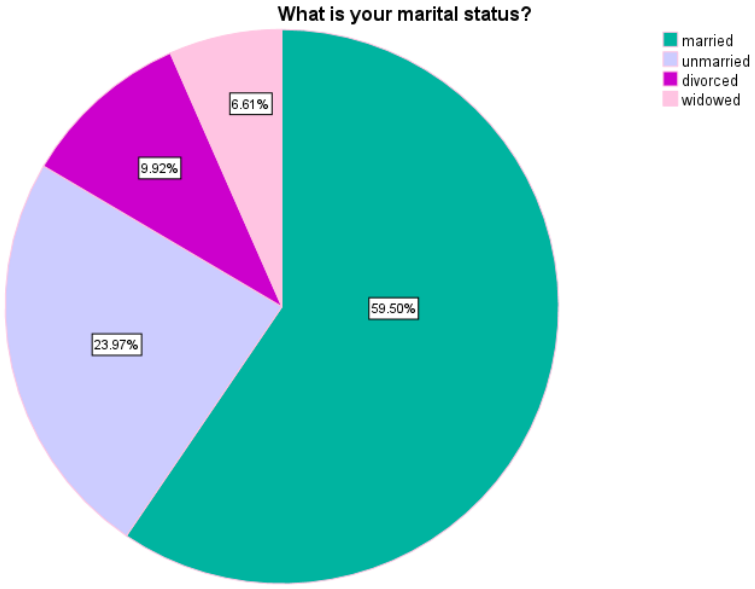


Fig 4.8: Descriptive statistics of Marital Status

4.5. Descriptive statistics of Profession

	Frequency	Percent	Valid Percent	Cumulative Percent
Doctors	58	47.9	47.9	47.9
Nurses	38	31.4	31.4	79.3
Allied Health Professionals	25	20.7	20.7	100.0
Total	121	100.0	100.0	

Table 5.5 demonstrates the descriptive statistics regarding professions, along with doctors, nurses and allied health professionals. Doctors forming the largest group (47.9%), followed by nurses (31.4%) and allied health professionals (20.7%) with a total of 121 participants.

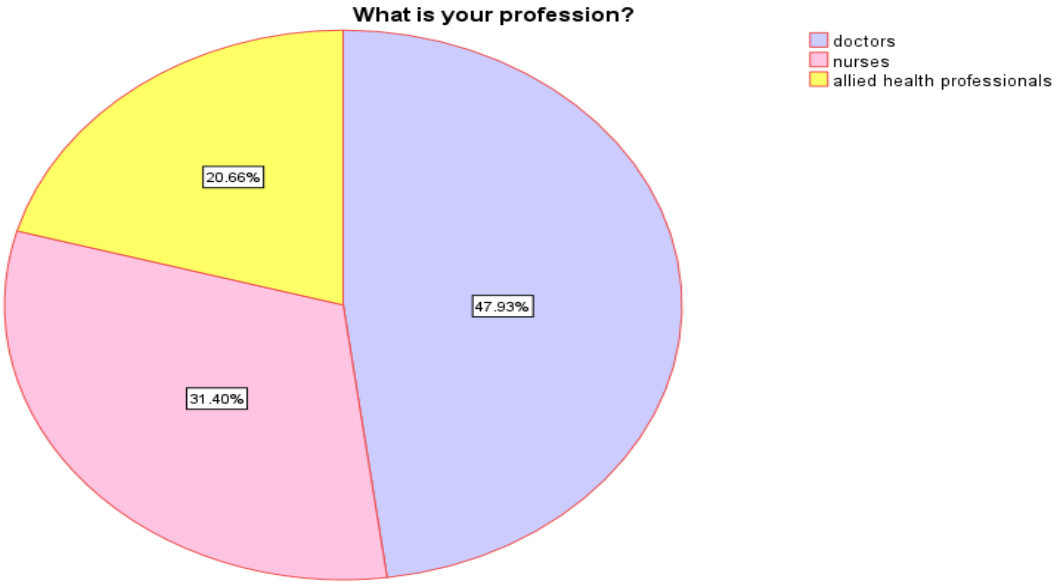


Fig 4.9: Descriptive statistics of Profession

4.6. Descriptive statistics of Duration of tele-rehabilitation practice

	Frequency	Percent	Valid Percent	Cumulative Percent
<1 year	43	35.5	35.5	35.5
1-3 years	78	64.5	64.5	100.0
Total	121	100.0	100.0	

The table demonstrates that the major portion of respondents has been practicing tele-rehabilitation for 1-3 years, constituting 64.5% of the sample. Compared to, 35.5% have less than one year of experience. This implies that the majority have moderate experience in tele-rehabilitation practice.

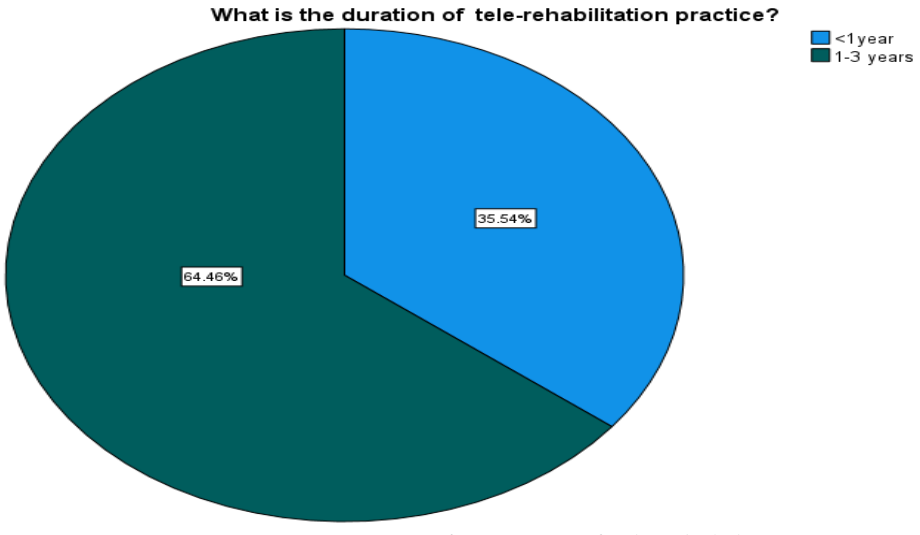


Fig 4.10: Descriptive statistics of Duration of tele-rehabilitation practice

4.7. Descriptive statistics of Work Setting

	Frequency	Percent	Valid Percent	Cumulative Percent
Hospital	48	39.7	39.7	39.7
Private clinic	37	30.6	30.6	70.2
Home-based practice	36	29.8	29.8	100.0
Total	121	100.0	100.0	

The table demonstrates that the largest proportion of respondents work in hospitals (39.7%). Private clinic and home-based practice have similar depiction, constituting 30.6% and 29.8% respectively. Generally, work settings are evenly distributed, although hospitals are the most common workplace.

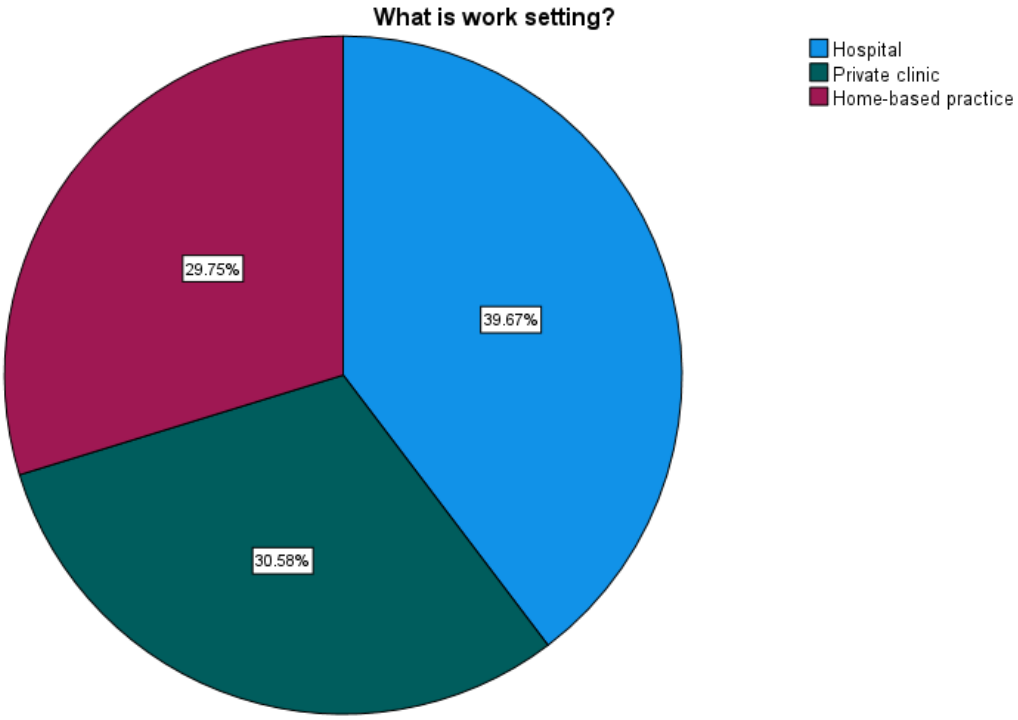


Fig 4.11: Descriptive statistics of Work Setting

4.8. Descriptive statistics of BAT

Variables	Mean	SD
At work, I feel mentally exhausted.	2.7438	1.31
Everything I do at work requires a great deal of effort.	2.9917	1.29
After a day at work, I find it hard to recover my energy.	2.9174	1.33
At work, I feel physically exhausted.	2.9587	1.34
When I get up in the morning,		

I lack the energy to start a new day at work.	2.7107	1.45
I want to be active at work, but somehow I am unable to manage.	2.9091	1.14
When I exert myself at work, I quickly get tired.	2.8017	1.14
At the end of my working day, I feel mentally exhausted and drained.	2.8512	1.25
I struggle to find any enthusiasm for my work.	2.6942	1.27
At work, I do not think much about what I am doing and I function on autopilot.	2.8017	1.18
I feel a strong aversion towards my job.	2.9091	1.27
I feel different about my job.	2.9174	1.20
I'm cynical about what my work means to others.	2.8347	1.24
At work, I have trouble staying focused.	2.8099	1.26
At work, I struggle to think clearly.	2.9504	1.33
I'm forgetful and distracted at work.	2.8926	1.29
When I'm working, I have trouble concentrating.	2.9008	1.20
I make mistakes in my work because I have my mind on other things.	2.9587	1.22
I have trouble falling or staying asleep.	2.8182	1.20
I tend to worry.	2.9256	1.24
I fell tense and stressed.	3.0496	1.30
I feel anxious and/or suffer from panic attacks.	2.5785	1.22
Noise and crowed disturb me.	2.7686	1.31
I suffer from palpitations or chest pain.	2.8926	1.25
I suffer from stomach and/or intestinal complaints.	2.8595	1.19
I suffer from headaches.	2.9587	1.24
I suffer from muscle pain, for example in the neck, shoulder	3.1736	1.30

or back		

The average score of the BAT items between 2.58 to 3.17, indicating an average level of burnout symptoms among interviewee. Higher mean values were noticed for stress and physical complaints, particularly muscle pain and feeling tense. The standard deviations (1.14–1.45) put forward moderate variability in respondents' experiences of burnout.

4.9. Descriptive statistics of PSS

Variables	Mean	SD
In the last month, how often have you been upset because of something that happened unexpectedly?	2.3140	1.35
In the last month, how often have you felt that you were unable to control the important things in your life?	2.5289	1.19
In the last month, how often have you felt nervous and stressed?	2.5620	1.25
In the last month, how often have you felt confident about your ability to handle your personals problems?	2.5950	1.24
In the last month, how often have you felt that things were going your way?	2.3554	1.10
In the last month, how often have you found that you could not cope with all the things that you had to do?	2.3802	1.10
In the last month, how often have you been able to control irritations in your life?	2.3140	1.15
In the last month, how often have you felt that you were on top of things?	2.6281	1.11
In the last month, how often have you been angered because of things that happened that were outside of your control?	2.1901	1.12
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	2.4298	1.18

The average scores of the PSS items are 2.19 to 2.63 with an average level of perceived stress by the respondents over the past one month. An increase in mean values was observed in feeling on top of things (M = 2.63), and feeling nervous and stressed (M = 2.56). The standard deviations (1.10–1.35) put forward moderate variability in participants' stress experiences.

4.10. Frequency and Percentage Distribution of Burnout Assessment Tool

	Never	Rarely	Sometimes	Often	Always
At work, I feel mentally exhausted.	28 (23.1%)	26 (21.5%)	30 (34.8%)	23 (19.0%)	14 (11.6%)
Everything I do at work requires a great deal of effort.	18 (14.9%)	28 (23.1%)	31 (25.6%)	25 (20.7%)	19 (15.7%)
After a day at work, I find it hard to recover my energy.	22 (18.2%)	28 (23.1%)	27 (22.3%)	26 (21.5%)	18 (14.9%)
At work, I feel physically exhausted.	19 (15.7%)	31 (25.6%)	30 (24.8%)	18 (14.9%)	23 (19.0%)
When I get up in the morning, I lack the energy to start a new day at work.	35 (28.9%)	25 (25.7%)	21 (17.4%)	20 (16.5%)	20 (16.5%)
I want to be active at work, but somehow i am unable to manage.	11 (9.1%)	38 (31.45)	36 (29.8%)	23 (19.0%)	13 (10.7%)
When I exert myself at work, I quickly get tired.	17 (14.0%)	33 (27.3%)	37 (30.6%)	25 (20.7%)	9 (7.4%)
At the end of my working day, I feel mentally exhausted and drained.	19 (15.7%)	33 (27.3%)	31 (25.6%)	23 (19.0%)	15 (12.4%)
I struggle to find any enthusiasm for my work.	28 (23.1%)	25 (20.7%)	36 (29.8%)	20 (16.5%)	12 (9.9%)
At work, I do not think much about what I am doing and I function on autopilot.	18 (14.9%)	33 (27.3%)	36 (29.8%)	23 (19.0%)	10 (8.3%)
I feel a strong aversion towards my job.	21 (17.4%)	25 (20.7%)	35 (28.9%)	24 (19.8%)	16 (13.25%)
I feel different about my job.	16 (13.2%)	31 (25.6%)	35 (28.9%)	25 (20.7%)	14 (11.6%)
I'm cynical about what my work means to others.	21 (17.4%)	27 (22.3%)	39 (32.2%)	19 (15.7%)	15 (12.4%)
At work, I have trouble staying focused.	22 (18.2%)	30 (24.8%)	32 (26.4%)	23 (19.0%)	14 (11.6%)
At work, I struggle to think clearly.	22 (18.2%)	25 (20.7%)	30 (24.8%)	25 (20.7%)	19 (15.7%)
I'm forgetful and distracted at work.	21 (17.4%)	28 (23.1%)	32 (26.4%)	23 (19.0%)	17 (14.0%)
When I'm working, I have trouble concentrating.	18 (14.9%)	26 (21.5%)	41 (33.9%)	22 (18.2%)	14 (11.6%)
I make mistakes in my work because I have my mind on other things.	16 (13.2%)	28 (23.1%)	39 (32.2%)	21 (17.4%)	17 (14.0%)
I have trouble falling or staying asleep.	20 (16.5%)	28 (23.1%)	39 (32.2%)	22 (18.2%)	12 (9.9%)
I tend to worry.	21 (17.4%)	22 (18.2%)	36 (29.8%)	29 (24.0%)	13 (10.7%)
I fell tense and stressed.	20 (16.5%)	22 (18.2%)	29 (24.0%)	32 (26.4%)	18 (14.9%)

I feel anxious and/or suffer from panic attacks.	26 (21.5%)	37 (30.6%)	31 (25.6%)	16 (13.2%)	11 (9.1%)
Noise and crowed disturb me.	26 (21.5%)	29 (24.0%)	27 (22.3%)	25 (20.7%)	14 (11.6%)
I suffer from palpitations or chest pain.	17 (14.0%)	35 (28.9%)	28 (23.1%)	26 (21.5%)	15 (12.4%)
I suffer from stomach and/or intestinal complaints.	19 (15.7%)	27 (22.3%)	38 (31.4%)	26 (21.5%)	11 (9.1%)
I suffer from headaches.	20 (16.5%)	23 (19.0%)	32 (26.4%)	34 (28.1%)	12 (9.9%)
I suffer from muscle pain, for example in the neck, shoulder or back	17 (14.0%)	21 (17.4%)	29 (24.0%)	32 (26.4%)	22 (18.2%)

This table shows the frequency and percentage distribution of burnout assessment scale. This scale shows mostly doctors, nurses and health care professionals who spend more time in their field have more burnout then youngsters in this field.

4.11. Frequency and Percentage Distribution of Perceived Stress Scale

	Never	Almost Never	Sometimes	Fairly Often	Very Often
In the last month, how often have you been upset because of something that happened unexpectedly?	14 (11.6%)	24 (19.8%)	23 (19.0%)	31 (25.6%)	28 (23.1%)
In the last month, how often have you felt that you were unable to control the important things in your life?	7 (5.8%)	19 (15.7%)	28 (23.1%)	37 (30.6%)	30 (24.8%)
In the last month, how often have you felt nervous and stressed?	8 (6.6%)	21 (17.4%)	22 (18.2%)	35 (28.9%)	35 (28.9%)
In the last month, how often have you felt confident about your ability to handle your personals problems?	8 (6.6%)	18 (14.9%)	24 (19.8%)	37 (30.6%)	33 (27.3%)
In the last month, how often have you felt that things were going your way?	7 (5.8%)	19 (15.7%)	39 (32.2%)	36 (29.8%)	20 (16.5%)
In the last month, how often have you found that you could not cope with all the things that you had to do?	5 (4.1%)	22 (18.2%)	38 (31.4%)	34 (28.1%)	22 (18.2%)
In the last month, how often have you been able to control irritations in your life?	7 (5.8%)	25 (20.7%)	33 (27.3%)	35 (28.9%)	21 (17.4%)

In the last month, how often have you felt that you were	4 (3.3%)	17 (14.0%)	31 (25.6%)	37 (30.6%)	32 (26.4%)

on top of things?					
In the last month, how often have you been angered because of things that happened that were outside of your control?	7 (5.8%)	29 (24.0%)	35 (28.9%)	34 (28.1%)	16 (13.2%)
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	5 (5.0%)	24 (19.8%)	30 (24.8%)	34 (28.1%)	27 (22.3%)

The following table shows the frequency and percentage distribution of the perceived stress scale among doctors, nurses and health care providers are shown in the following table: The majority of the respondents stated that they experienced stress sometimes, fairly often and very often during their work indicating a relatively high level of perceived stress. Nonetheless, the percentage that experienced stress and mark (never or almost never) with their work remains less.

DISCUSSION

This study shows the prevalence of burnout and perceived stress among healthcare providers in telerehabilitation. The findings showed moderate levels of burnout and perceived stress among healthcare providers. A majority of participants reported experiencing symptoms of stress and burnout occasionally with physical exhaustion and feeling tense being the most prominent issues. The overall prevalence of burnout level was higher than perceived stress among healthcare providers.

The sociodemographic analysis showed that the participants had an average age of 39 years. Most of the respondents were between the ages of 25–45. That suggests a fairly experienced group handling their professional duties. The number of men and women was nearly equal, but men constituted a slight majority at 52.1%. This combination enhances the extent to which the results can be generalized to other healthcare, jobs including those of doctors and nurses as well as other allied health professionals.

Results of Burnout Assessment Tool (BAT) revealed means ranging between 2.58 and less than that 3.17. These aspects illustrate the moderate burnout levels. In the various areas of burnout, physical exhaustion was the most prominent and such stress symptoms as muscle pain (M = 3.17) and others feeling tense (M = 3.04). Emotional exhaustion came through too. Respondents mentioned struggling to regain energy after work and feeling mentally wiped out. All this indicates that physical and psychological aspects of burnout play a big role in telerehabilitation environments.

The frequency distribution also supports this claim. A quit significant proportion of the respondents reported that they experienced the symptoms of burnout-related cases at different levels. Frequencies that is sometimes too frequent. Burnout symptoms such as decreased motivation, doing work without enthusiasm and the inability to concentrate were all most frequently. This is consistent with the burnout construct in that burnout is associated with emotional exhaustion, dehumanization, and lessened personal are only some of the symptoms they experienced accomplishment. Moreover, the cognitive symptoms such as forgetfulness and concentration problems point to possible professional impairments associated with burnout.

Mean scores of the results of the Perceived Stress Scale ranged between 2.19 and 2.63. That points to moderate levels of stress overall. A lot of respondents said they felt nervous, stressed out, or like they had no control pretty often. It all adds up to stress being pretty common and hard to shake. The presences of burnout right next to it support the fact that the accumulation of burnout is significantly contributed by the continuing stress.

These findings are in line with previous studies. Khalid et al. (2025) discovered that telecommuters had greater exhaustion due to their isolated work setting and the workload.

Similarly, Noor et al. (2024) pointed to the fact that there is a certain threat of burnout among therapists due to busy schedules.

It is worth mentioning that the present research also corresponds with the obstacles associated with the application of telerehabilitation mentioned by Aloyuni et al. (2020), including technical issues, resource constraints, and poor organizational support. These variables could play an indirect role in stress and burnout by contributing to the stressors of labor, stress and ineffectiveness.

It is notable also that patients reported that they had physical symptoms related to stress, such as headaches, gastrointestinal disorders, and musculoskeletal pains. Therefore, it can be concluded that burnout affects healthcare professionals not only psychologically but also physically, which might negatively impact both patients' and professionals' health and working capacity.

The study is associated with many weaknesses, in spite of the intriguing results and recommendations. Firstly, a cross-sectional study cannot prove any causality between the variables investigated. Besides, non-probability convenient sampling might have led to sample bias. Finally, self-report instruments like the BAT and PSS are also prone to response biases; therefore, some results might be exaggerated.

5.1: Conclusion:

Burnout among healthcare professionals involved in telerehabilitation is found to be moderate-high (BAT: 2.58 – 3.17), characterized by symptoms such as emotional exhaustion, tiredness, lack of motivation, inability to concentrate, lack of enthusiasm, working mechanically, and affects one's efficiency and cognition. The stress levels perceived are also moderate-high (PSS: 2.19-2.63) as many people report that they usually feel anxious, helpless, and overwhelmed due to stress.

5.2: Limitations:

- The small size of the sample (n = 121) constrains the generalizability.
- Convenient sampling can result in selection bias and decreased representativeness due to non-probability convenient sampling applicability of the results.
- Reliance on self-reported tools (BAT and PSS) increases the risk of response and recall bias.

5.3: Recommendations:

- Have a mental health support and stress management program in place to support and manage stress and mental health issues in the workplace healthcare providers.
- Better workload management and offer improved organizational and technical subsidy to telerehabilitation services.

ANNEXURE-I

ENGLISH CONSENT FORM

The study you are about to participate is a cross-sectional study titled as;

"PREVALENCE OF BURNOUT AND PERCEIVED STRESS AMONG HEALTHCARE PROVIDERS IN TELEREHABILITATION"

The study has no potential harm to participants. All data collected from you will be coded in order to protect your identity, and should not be disclosed to anyone. Following the study there will be no way to connect your name with your data. Your answers to the questions will not affect the quality of education given to you. Any additional information about the study results will be provided to you at its conclusion, upon your request.

You are free to withdraw from the study at any time. You agree to participate, indicating that you have read and understood the nature of the study, and that all your inquiries concerning the activities have been answered to your satisfaction.

NAME ..... SIGNATURE .....

DATE ...

URDU CONSENT FORM

میں_____ تصدیق کرتا/کرتی ہوں کہ

محترم

نے

اپنی تحقیق

(ٹیلی بحالی میں صحت کی دیکھ بھال فراہم کرنے والوں میں برن آؤٹ اور سمجھے جانے والے تناؤ کا پھیلاؤ)

زیر نگرانی **ڈاکٹر** ثانیہ ناز

کے متعلق بتادیا ہے۔ مجھے اس تحقیق کی نوعیت، مقاصد، احداف، توقعات، فوائد اور خطرات کے متعلق ساری معلومات فراہم کر دی گئی ہیں۔
اس تحقیق کے دوران ساری معلومات صیغہ راز میں رہیں گی اور مریض کا نام اور دیگر معلومات صرف تحقیق کے لیے استعمال ہوں گی۔ مجھے یہ بھی بتادیا گیا ہے کہ میں اس تحقیق سے متعلقہ ہر قسم کے سوال پوچھنے کا مجاز ہوں اور یہ تحقیق صرف ایک شخص ک مفاد میں نہیں ہے بلکہ بحشیت مجموعی انسانیت کا مفاد اس سے وابسطہ ہے۔ تمام تفصیلات جاننے کے بعد یس تحقیق میں شامل ہونے یا نہ ہونے پر کسی کا قائل نہیں ہوں۔ اس تحقیق سے کسی بھی وقت علیحدہ ہونے پر مجھ پر کوئی پابندی نہیں ہو گی۔ میں بذاتِ خود بقائمی حوش و حواس اور رضامندی سے اس تحقیقاتی عمل میں شامل ہوتی / ہوتا ہوں۔

دستخط محقق ----------
دستخط شرکت کار ----------
تاریخ ----------

ANNEXURE-II

Serial Number: _____ Name: _____
Age: _____ Marital Status: _____
Gender: _____
Duration of tele-rehabilitation practice: a. <1year b. 1-3 years
Profession: a. Doctors b. Nurses c. Allied health professionals
Work Setting: a. Hospital b. Private clinic c. Home-based practice

OUTCOME VARIABLES

- Burnout Assessment Tool (BAT)
- Perceived Stress Scale (PSS)

BURNOUT ASSESSMENT TOOL

	Never	Rarely	Sometimes	Often	Always
1. At work, I feel mentally exhausted*	☐	☐	☐	☐	☐
2. Everything I do at work requires a great deal of effort	☐	☐	☐	☐	☐
3. After a day at work, I find it hard to recover my energy*	☐	☐	☐	☐	☐
4. At work, I feel physically exhausted*	☐	☐	☐	☐	☐
5. When I get up in the morning, I lack the energy to start a new day at work	☐	☐	☐	☐	☐
6. I want to be active at work, but somehow I am unable to manage	☐	☐	☐	☐	☐
7. When I exert myself at work, I quickly get tired	☐	☐	☐	☐	☐
8. At the end of my working day, I feel mentally exhausted and drained	☐	☐	☐	☐	☐
9. I struggle to find any enthusiasm for my work*	☐	☐	☐	☐	☐
10. At work, I do not think much about what I am doing and I function on autopilot	☐	☐	☐	☐	☐
11. I feel a strong aversion towards my job*	☐	☐	☐	☐	☐
12. I feel indifferent about my job	☐	☐	☐	☐	☐
13. I'm cynical about what my work means to others*	☐	☐	☐	☐	☐
14. At work, I have trouble staying focused*	☐	☐	☐	☐	☐
15. At work I struggle to think clearly	☐	☐	☐	☐	☐
16. I'm forgetful and distracted at work	☐	☐	☐	☐	☐
17. When I'm working, I have trouble concentrating*	☐	☐	☐	☐	☐
18. I make mistakes in my work because I have my mind on other things*	☐	☐	☐	☐	☐
19. I have trouble falling or staying asleep	☐	☐	☐	☐	☐
20. I tend to worry	☐	☐	☐	☐	☐
21. I feel tense and stressed	☐	☐	☐	☐	☐
22. I feel anxious and/or suffer from panic attacks	☐	☐	☐	☐	☐
23. Noise and crowds disturb me	☐	☐	☐	☐	☐
24. I suffer from palpitations or chest pain	☐	☐	☐	☐	☐
25. I suffer from stomach and/or intestinal complaints	☐	☐	☐	☐	☐
26. I suffer from headaches	☐	☐	☐	☐	☐
27. I suffer from muscle pain, for example in the neck, shoulder or back	☐	☐	☐	☐	☐

PERCEIVED STRESS SCALE

For each questionchoose from the following alternatives:
0 - never 1- almost never 2 - sometimes 3 - fairly often 4 - very often

_____ 1. In the last month, how often have you been upset because of something that happened unexpectedly?

_____ 2. In the last month, how often have you felt that you were unable to control the important things in your life?

_____ 3. In the last month, how often have you felt nervous and stressed?

_____ 4. In the last month, how often have you felt confident about your ability to handle your personal problems?

_____ 5. In the last month, how often have you felt that things were going your way?

_____ 6. In the last month, how often have you found that you could not cope with all the things that you had to do?

_____ 7. In the last month, how often have you been able to control irritations in your life?

_____ 8. In the last month, how often have you felt that you were on top of things?

_____ 9. In the last month, how often have you been angered because of things that happened that were outside of your control?

_____ 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

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