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Correlation Between Physical Activity Level And Occupational Burnout In Physiotherapists :An Observational Analytical Study"

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Abstract:The research aimed to determine the correlation between physical activity level and occupational burnout in physiotherapists, It was an observational analytical study.In this study 108 physiotherapists had participated between 25 to 60 years of age , IPAQ -SF and Oldenburg burnout inventory(OBI), which is a questionnaire was filled by them ,The data was analysed using SPSS software There was no significant correlation seen between IPAQ -SF scores and OBI , as correlation coefficient was -.080 but p value was 0.413 was was not significant.Hence the study concluded that there was no significant correlation seen in this study between physical activity level and occupational burnout in physiotherapists. The study also concluded that those who were involved in health enhanced physical activity had low burnout

ABBREVATIONS

- IPAQ: INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE
- OBI: OLDENBURG BURNOUT INVENTORY
- IPAQ - SF : INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE- SHORTFORM
- HEPA: HEALTH ENHANCED PHYSICAL

INTRODUCTION

Occupational burnout is defined as psychological syndrome of emotional exhaustion, Depersonalisation and reduced sense of personal achievement in people who's job includes more interactions with others.[1].It is characterized by three dimensions:.Feeling of tiredness or constant fatigue.Decreased attachment and increased psychological distance from their occupation, and negative feeling attached with their job.Reduction in work efficacy or reduced output.Feeling of emotionally drained out completely as a result of accumulated stress from your job is called as emotional exhaustion.Loss of concerns for others is called as depersonalization (clients ,patients, colleagues) and also when the emotional distance increases , and which is expressed through distrust behaviour towards responsibilities at their workplace and false remarks and sometimes callousness as well. Personal achievement is a feeling that acts as a "safety valve" and it is a feeling of gaining something or getting expected outcome.It ensures fulfilment in the workplace and a good view of achievements at workplace.Based on above definitions of burnout , the scale used is Maslach burnout inventory to measure burnout.[1] Occupational burnout results from chronic work place stress which cannot be successfully managed. In the 11 revision of the International Classification of Diseases (ICD-11) burnout is considered as an occupational phenomenon. It is not included in amedical condition .[2]There is another scale which is used is Oldenburg burnout inventory as an alternative to MBI which is based on two components exhaustion and disengagementThe Oldenburg Burnout Inventory (OLBI) includes both types of questions, that is questions in a positive way and questions in a negative way. Two core dimensions of occupational burnout is being assessed in this questionnaire .Those core dimensions are Exhaustion and Disengagement (from work).Exhaustion is characterized as the long-term result of continuous exposure to one type of job demands. It is a outcome of extreme affective , physical and cognitive strain.[7]

The OLBI encompasses not only affective characteristics of tiredness but also physical and cognitive aspects, in contrast to how exhaustion is operationalized in the original MBI or MBI-GS. This makes it easier to apply the tool to both workers who do physical labor and those whose primary responsibility is information processing. Cynicism largely refers to (lack of) interest in the job and job meaning, whereas depersonalization in the original MBI refers to emotionally separating oneself from service users (e.g., becoming impersonal, callous, hardening). Disengagement in the Measurement of Burnout (and Engagement) is related.[7]

Distancing oneself from one's work in general, work object, and work content (example: dull, no longer

demanding, but also "disgusting") is referred to as OLBI. Additionally, the disengagement questions focus on how employees feel about their occupations particurlarly in relation to their level of identification with their work and inclination to stay in the same line of work. Negative attitudes regarding their job-related goals, work-related material, or work in general are supported by disengaged employees.[7]The OLBI differs from the MBI -GS (and the original MBI) as in OLBI questions are asked in both ways positive as well as in a negative way , representing not just one end of the continuum but both ends.[7]

There are three stages of burnout 1. onset of stress Symptoms seen in first stage is poor concentration, memory lapses, irritability, and anxiet

2.Second stage of burnout is Energy Conservation symptoms seen is avoidance, lateness, and social withdrawal , procastination.

3.The third stage is Exhaustion which is characterised by anxiety, depression, apathy, and suicidal ideation.The stages of burnout can be stopped , reversed and mixed picture can also be seen.[3]

According to the WHO, physical activity is the movement of joints which is produced my force from the skeletal muscles that involves the use of energy. All movement, whether done for recreation, transportation to go to and from locations, or as part of a person's job, is considered physical exercise. Physical activity that is of a moderate or strong intensity enhances health.

Physical activity level is measured using International Physical Activity Questionnaire.(IPAQ).

The IPAQ measure was created as a result of the widespread issue of physical inactivity as well as the requirement for population monitoring and cross-national comparisons. The development and testing of these IPAQ instruments took place across a number of stages, and this extensive cross-national validity and dependability study is the result.[4]

The "usual week" and "last 7 day" reference periods, as well as the the long and short variants' reliability levels were equivalent. A self-administered technique of data collecting has similar dependability to telephone administration. When respondents were given the same IPAQ forms over successive visits, reliability and inter-method agreement improved over time, which is evidenced by both the long and short variant reliability testing, it is clear that there is a "learning effect" at work.[4]

The IPAQ measure evaluates many forms of intensity of physical activity and sitting time that people engage

in as part of their daily activities and through that scale, energy which is spent in doing that activity is measured in MET-minute/week. It does not contain any sub scale further.This scale can be used to measure physical activity in the following target population: youth who are at least 15 years old .[5]

It contains 7 items. It is an Open-ended questionnaire surrounding individuals' It measures last 7-day recall of physical activity it requires paper-pencil version or orally can also be filled. It is Available in English and many different languages.[4,5]

Score calculated by calculating MET min per week for each category.

- Walking MET-minutes/week =3.3*walking minutes*walking days.[5]
- Moderate MET-minutes/week =4.0*moderate intensity activity minutes*moderate days.[5]
- Vigorous MET-minutes/week=8.0*vigorous intensity activity minutes*vigorous intensity days.[5]

All the data which is in hours is converted in minutes.

Then the total score is calculated by adding scores of all the categories.

Total MET-minutes/week =(Walking MET-minutes/week)+(Moderate MET- minutes/week)+(Vigorous MET=minutes/week)

According to the score 3 levels of physical activity is proposed according to IPAQ

- Inactive: No activity reported or some activity reported but not enough to meet category 2 or 3.
- minimum of atleast 600 MET-minutes/week.
- HEPA active: if a participant meet any one of the following 2 criteria

Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET- minutes/week OR 7 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 3000 MET-minutes/week.[5]

NEED OF STUDY

Occupational Burnout is seen in many health care professionals including nurses and physiotherapists.[8,12] Burnout is highly prevalent among Indian health care professionals with close to one-fourth of them suffering from burnout .[12]
As burnout and work related stress has a consequence on mental and physical health, in turn it reduces our

work efficiency and can cause various mental stress related comorbidities.

Stress at work is linked to cardiovascular risk factors as well..[13]
It can also affect the sleep pattern and duration and can lead to absentesim in workplace

As a physiotherapist the person has to be physically and mentally active and fit while dealing with patients and while performing their professional duties.

If a therapist is emotionally exhausted , depersonalised and disengaged, the relationship between the patient and the therapist can get affected. Additionally, it might negatively affect how well a patient receives therapy. Therefore if the physical activity level of a therapist would be related to occupational burnout , then we can have a systematic preventive approach towards it for reducing the occupational burnout by incorporating cregular exercise and increasing the leisure time physical activity in physiotherapists which will help them in their overall performance and also it will help them in boosting their confidence and that can have positive change in the therapist.

Furthermore, there are only few studies on the relationship between physiotherapist's level of physical activity and occupational burnout in India..

Hence the need for study.

AIM

To determine the correlation between physical activity level and occupational burnout in physiotherapists.

OBJECTIVES

1. To determine the physical activity levels by using International Physical Activity Questionnaire short form (IPAQ -SF) in physiotherapists.

2. To determine the level of occupational burnout by using Oldenburg Burnout Inventory in physiotherapists.

3. To correlate between physical activity level and occupational burnout in physiotherapist

HYPOTHESIS

Null Hypothesis (H_0): There is no significant correlation between physical activity level and occupational burnout in physiotherapists.

Alternate Hypothesis (H_a): There is a significant correlation between physical activity level and

occupational burnout in physiotherapists.

MATERIALS AND METHODOLOGY

Study Design: Observational Analytical design
Study Setting: Physiotherapy college, community clinical settings and hospitals.
Study Population: Physiotherapists
Sample Size: Sample size was determined using the estimated values from literature "Tomruk MS, Gurpinar B,Özyurek S, Karadibak D, Çakir Ö, Angin S. Relationship between physical activity and perceived stress in physiotherapists. Journal of Exercise Therapy and Rehabilitation. 2016;3(1):15-20." [17]

Using the formula **Total sample size = N = $[(Z\alpha+Z\beta)/C]^2 + 3$.**[39]

where $Z\alpha$ is the z variate of alpha error i.e. a constant with value 1.96, $Z\beta$ is the z variate of beta error i.e. a constant with value 0.84
$C = 0.5 * \ln[(1+r)/(1-r)]$.[39]
Approximate estimates:
1. 80% power
2. Type I error to be 5%
3. Type II error to be 20%
4. Minimum correlation between the 2 variables as 0.275

102 samples need to be taken in the present study.

Sampling Technique: Convenient sampling
Study Duration: 18 months
Inclusion Criteria
1. Physiotherapists those who have been working since 1 year.
2. Physiotherapists who are open to take part in the study.
3. Physiotherapists with valid license.
4. Physiotherapists between 25 to 60 years of age

Exclusion Criteria
1. Physiotherapists with any diagnosed cardiac, respiratory, neurological condition and acute musculoskeletal condition.
2. Physiotherapists with any diagnosed psychological condition

MATERIALS USED

1. IPAQ -SF questionnaire
2. OBI Questionnaire
3. Pen

Outcome measures

International physical activity questionnaire short form (IPAQ): (short form) It measures the intensity of physical activity in MET-minute/week

Reliability and validity: high reliability alpha less than 0.8.[5]

Oldenburg burnout inventory:

Reliability and validity: Cronbach alpha ratings of 0.84 seen

METHODOLOGY

Approval was taken from Institutional Ethical Committee. Subjects were selected on the basis of inclusion criteria

102 samples was taken for the study.Subjects were selected on the basis of inclusion criteria.

IPAQ-SF scores and Oldenburg Burnout Inventory scores was calculated.

Physiotherapist's demographic data, years of experience ,work setting, scores of IPAQ-SF and

OLDENBURG

BURNOUT Inventory was recorded.

RESULTS AND ANALYSIS

All data were entered into a computer by giving coding system, proofed for entry errors

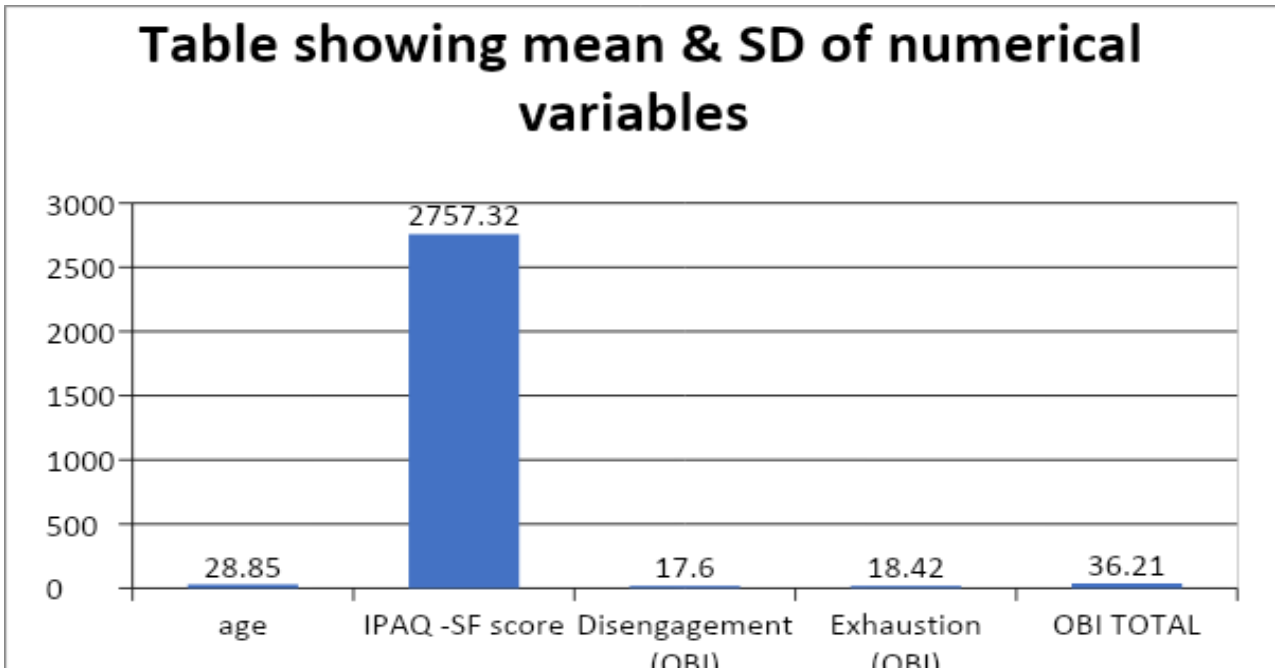
- Data obtained was compiled on a MS Office Excel Sheet (v 2019, Microsoft Redmond Campus, Redmond, Washington, United States).
- Data was subjected to statistical analysis using Statistical package for social sciences (SPSS v 26.0, IBM).
- Descriptive statistics like frequencies and percentage for categorical data, Mean & SD for numerical data has been depicted.

✓ Bivariate correlation between 2 numerical variables was checked using Spearman's correlation coefficient.

DESCRIPTIVE STATISTICS

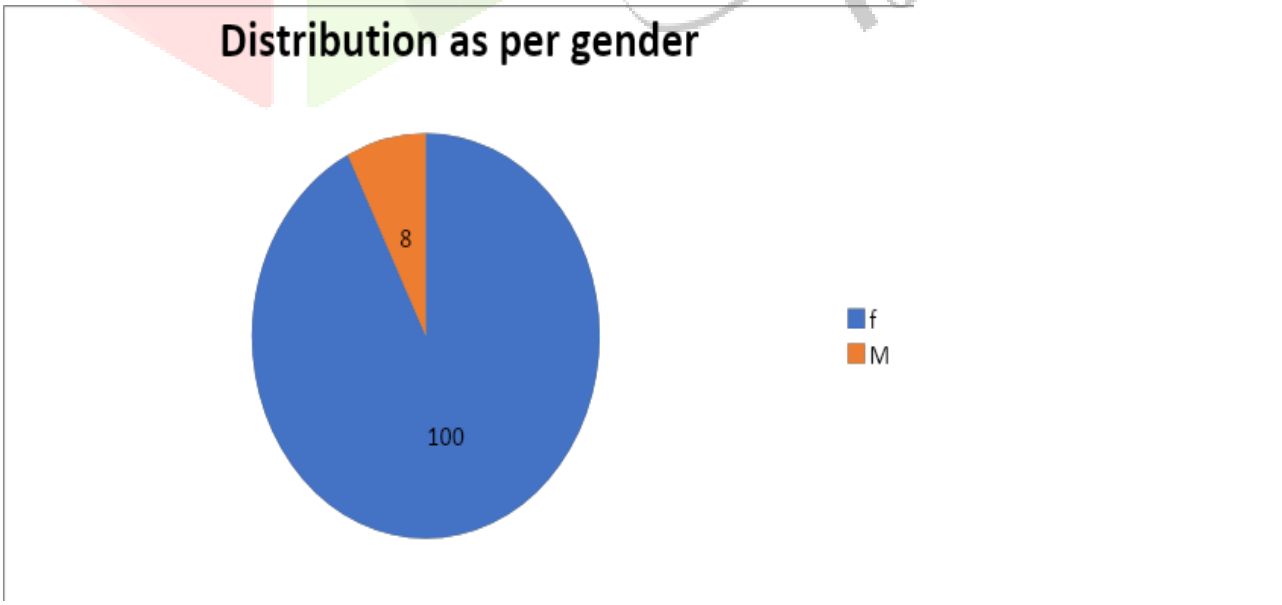
Table showing mean and standard deviation of numerical variables.

	N	Minimum	Maximum	Mean	Std. Deviation
Age	108	25	47	28.85	3.845
IPAQ -SF score	108	66	10716	2757.32	3032.129
Disengagement (OBI)	108	10	32	17.60	4.855
Exhaustion (OBI)	108	12	30	18.42	4.892
OBI TOTAL	108	23	60	36.21	8.665
Year of experience	108	1.0	20.0	3.472	3.1503



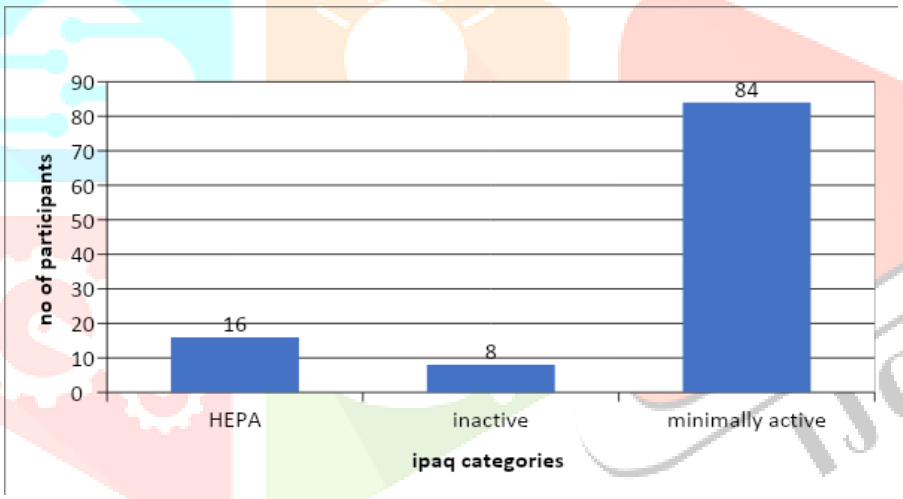
Frequency Tables
Distribution as per gender

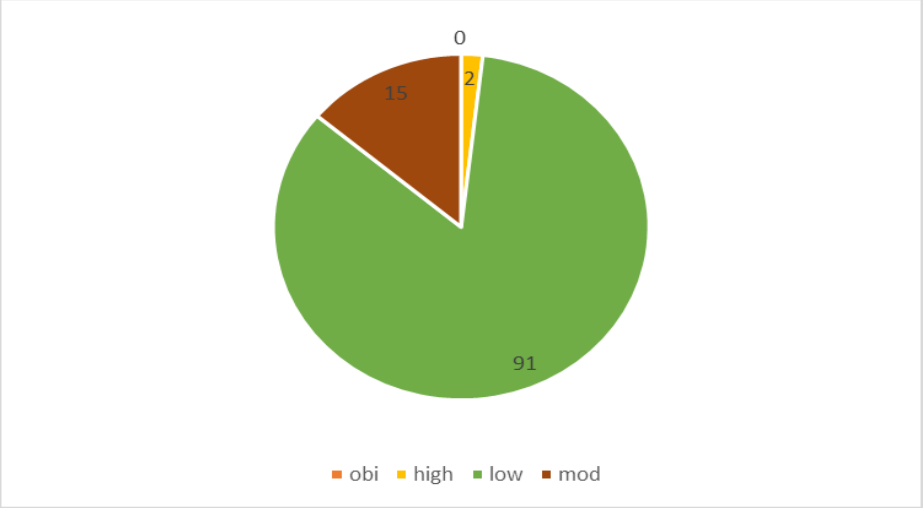
GENDER	FREQUENY	PERCET
FEMALE	100	92.6
MALE	8	7.4
TOTAL	108	100.0



Distribution as per IPAQ interpretation

	Frequency	percent
HEPA	16	14.8
Inactive	8	7.4
Minimally active	84	77.8
Total	108	100.0
	Frequency	percent
High	2	1.9
Low	91	84.3
Moderate	15	13.9
Total	108	100.0





Tests of Normality

	Shapiro-Wilk		
	Statistic	df	p value
IPAQ -SF score	.719	108	.000
Disengagement (OBI)	.920	108	.000
Exhaustion (OBI)	.908	108	.000
OBI TOTAL	.931	108	.000

P <0.05 indicates normality not followed.

In order to determine the correlation between the IPAQ TOTAL values and the OBI TOTAL values using statistical analysis , Spearman's correlation was utilized, as the data failed the normality test.

CORRELATIONS

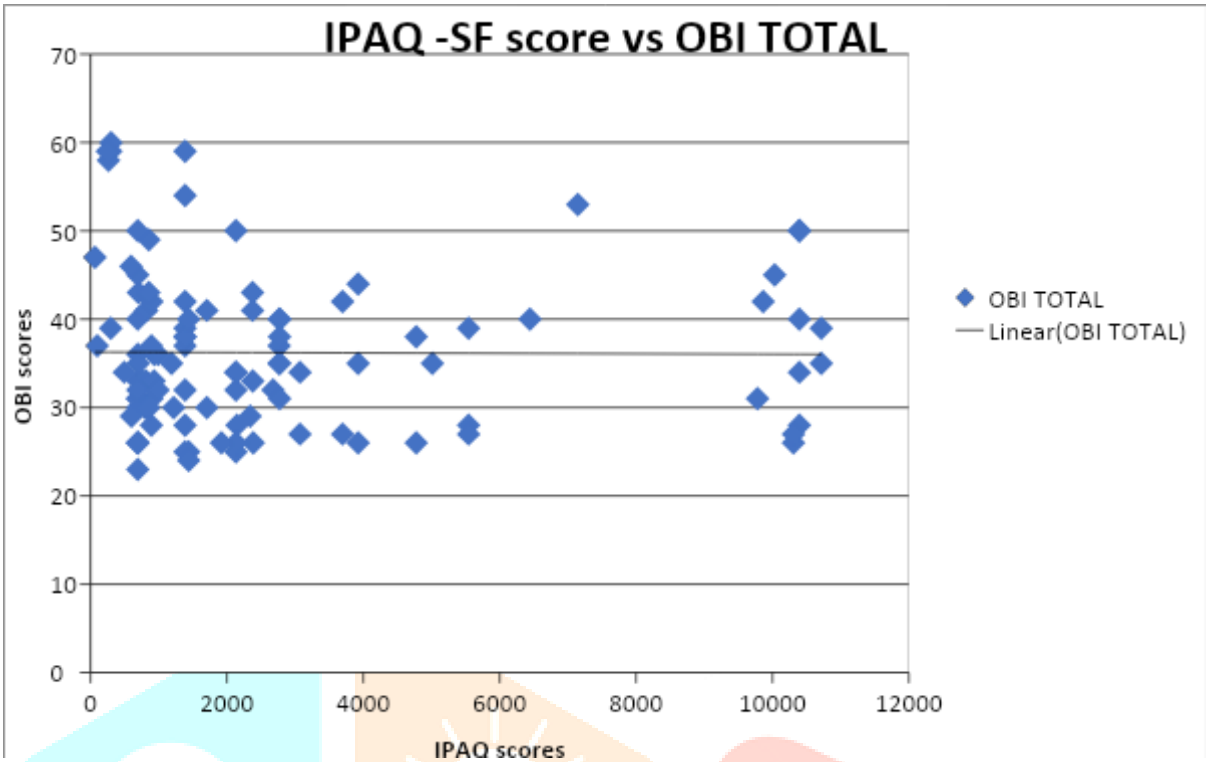
			IPAQ -SF Score
Spearman's rho	Disengagement(OBI)	Correlation Coefficient	_.077
		P value	.427
		N	108
	Exhaustion (OBI)	Correlation Coefficient	_.056
		P value	.565
		N	108
	OBI TOTAL	Correlation Coefficient	_.080
		P value	.413
		N	108

Interpretation

Since the p value for OBI TOTAL and IPAQ -SF total is 0.413 which is greater than 0.05, therefore p value is not significant .

Hence Correlation coefficient value will not be considered.

CORRELATION PLOT



IPAQ INTERPRETATION and OBI TOTAL INTERPRETATION

Count

		OBI TOTAL interpretation			
		high	low	moderate	Total
IPAQ interpretation	HEPA inactive	0	14	2	16
	minimally active	2	3	3	8
		0	74	10	84
Total		2	91	15	108

RESULTS

A total of 108 samples were collected, 100 of which were female and 8 of which were male. The mean age was 28 years. The mean IPAQ -SF score was 2757.32 MET-min per week. The mean OBI total was 36.21. Shapiro-wilk test was used for normality, as the data failed the normality test, spearmean's correlation coefficient was used for correlation between IPAQ -SF SCORES and OBI TOTAL scores.

Value of Spearman's rank correlation coefficient (rho) was -0.80 , but p value was 0.413 which was greater than 0.05 therefore since p value is non significant , there is no correlation between physical activity level which was determined by (IPAQ -SF) and Occupational burnout in working physiotherapists.

Also there was no correlation between each component of burnout and IPAQ -SF scores.

DISCUSSION

The aim of the study was to determine the correlation between physical activity level and occupational burnout in physiotherapists.

In this study most of the physiotherapists were young and mostly females. Most of the physiotherapists used to take home visits along with their practise in hospitals. Most of them were minimally physically active. Total sample size was 102. Data was collected from 108 physiotherapists and around 84 of them were minimally physically active. 16 of them were involved in health enhanced physical activity (HEPA) and 8 were inactive.

2 physiotherapists out of 108 physiotherapists had high occupational burnout which comes around 1.9 percent .91 people had low occupational burnout which comes around 84.3 percent .And 15 people had moderate burnout which comes around 13.9 percent.

In this study we found that there is no significant correlation between physical activity level and occupational burnout in physiotherapists as p value is not significant.

In this study people who are involved in health enhanced physical activity had low to moderate occupational burnout. But on the other hand majority of the physiotherapists were minimally physically active with low occupational burnout.

Various factors can influence Occupational burnout like age, gender , educational qualifications, wok setting , support from colleagues, friends, family ,job satisfaction, workload, work environment ,work shifts etc.[9,10]

There are few studies which says that more the years of experience , higher is the risk of occupational burnout.

In this study mostly young physiotherapists had participated. The average age of physiotherapist participated was 28 year. Majority of the physiotherapists had less than 5 years of experience in clinical practise. The average year of experience was Therefore despite of being less physically active their level of occupational burnout could be low.

The above mentioned finding is supported by the study done by Pinak et al., says that physiotherapists who have been in practice for more than 20 years have the highest level of burnout

As according to the definition mentioned above occupational burnout is a psychological syndrome of emotional exhaustion, depersonalisation, and reduced sense of personal achievements.

This shows that despite being less physically active if a person is satisfied with his or her job and is able to adjust and adapt to the work environment well will probably have a low occupational burnout level.

This study did not interviewed physiotherapists about their work schedule , their lifestyle , their marital status , their degree (bachelor's or masters) ,hobbies apart from physical activity or if they were practising any coping mechanism or taking any psychological counselling, which could affect the level of occupational burnout.

There might be a possibility that a physiotherapists is less physically active but might be incorporating some coping strategies to reduce and occupational burnout.

This study measures physical activity of last 7 days , so if a person was physically active previously and not much active in the recent days could also influence the level of physical activity .

Since there are three stages of occupational burnout, in this study majority of the physiotherapists belong to the initial two stages that is 84.3 percent had low burnout and 13.9 percent had moderate burnout. They coincided with minimal physical activity.

One of the component of IPAQ that is Health Enhanced Physical Activity (HEPA) coincided with low burnout which says that physiotherapists who were involved in health enhanced physical activity had low burnout.

Therefore according to this study it concludes that level of physical activity is independent of occupational burnout and therefore individual tailor made strategies to be incorporated to manage occupational burnout as occupational burnout is a psychological phenomenon and it totally depends on an individual's perspective

CONCLUSION

There is no significant correlation seen between Physical Activity Level And Occupational Burnout in Physiotherapists

The study also concludes that physiotherapists who were involved in health enhanced physical activity had low occupational burnout.

LIMITATION

1. While collecting the data the study did not included about their education background , their wok space , workload etc
2. Their previous or baseline physical assessment was not included like height , weight, BMI, previous physical activity level , about their lifestyle and also about their diet.
3. In this study there was no bifurcation made on the basis of specialization and on the work setting and occupation stress.
4. The study did not included about the physiotherapist's family background, marital status, no of kids ,their financial status, about their hobbies and type of hobbies and about how often they do practise

their hobbies.

SUGGESTION

A self made questionnaire can be made and circulated to the participants which includes questions about **demographic data** which includes name, age , gender, marital status , no of kids, family status, educational background

their work environment which includes type of shifts, working hours,work culture, resources etc

And **some personal questions** like support from family , friends, colleagues, seniors , or conflicts between them.

in a structured manner and comparisons and correlation of those factors with burnout and physical activity can be made which would be helpful in knowing the influence of those factors, so that we can target those factors which is causing high burnout and and we can identify factors which is helping and leading to low burnout.

CLINICAL IMPLICATIONS

The profession which is physically demanding for such people practising meditation , enough rest and involving in some other kind of activities can help in reducing occupational burnout. The profession which demands more of sitting or is not physically demanding for them being involved in physical activity or any kinds of sports can help them in reducing Occupational burnout .

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