Associations between physical activity and perceived physical, mental and work-related health of teachers in India

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Abstract

The aim of this study was to know the relationship between perception of the teacher related to physical, mental and work-related health, and various types of physical activity. A survey that assessed teachers' habits of physical activity and perceptions of their mental health was administered to a total of 200 educators recruited from various schools across the India. The teachers were surveyed about their physical activity, including how often they engaged and what kinds of physical activity. They were also probed about the state of their minds in terms of things like stress, sadness, and anxiety. According to this study, it was found that Regular exercisers among educators are more likely to report positive mental health than their fewer active counterparts.

In particular, educators who participated in high-impact exercise or yoga detailed lower levels of pressure, nervousness, and misery contrasted with the people who didn't take part in these exercises. In contrast, high-intensity exercise was linked to higher levels of stress and fatigue among teachers. Furthermore, the aforementioned research found that participating in team sports or group fitness classes led to higher feelings of social support and connectivity than those who did not. Improved views of one's mental health were shown to be associated with the aforementioned two characteristics. However, these connections were only significant for some kinds of physical activity and not for others. Overall, the results indicated that regular physical activity, particularly aerobic exercise and yoga, may enhance teachers' evaluations of their mental health. To get optimal outcomes, it's crucial to take into account suitable quantities and variations of physical activity, and also the setting in which it's executed. The educational system's vital component is the mental health and well-being of teachers, which has the potential for improvement with these findings.

Keywords: ***Physical activity, Perceived physical, Mental health and Work-related health***

Introduction

A capacity of a teacher to instruct and assist their students depends heavily on their own mental health and wellbeing. The role of teachers in the educational system cannot be overstated. Teacher job satisfaction and performance might suffer when instructors experience high levels of stress, anxiety, and burnout [1]. Thus, it is essential to identify practical strategies for enhancing educators' emotional and psychological well-being. Teachers are only one example of a group that might benefit from using physical activity to boost mental health and happiness. Physical activity is defined as any bodily

movement that expends energy. Many types of mental health outcomes, including stress, anxiety, and depression, have been linked to different types of physical exercise [2].

Both yoga and aerobic exercise have been found to have positive effects on mood and stress levels [3]. Nevertheless, little is known about how teachers' evaluations of their own mental health relate to their levels of physical exercise. So, this study set out to examine the relationships between teachers' self-reported levels of physical exercise and their ratings of their mental health.

Teachers' mental health can benefit greatly from regular physical activity. Physical activity can benefit teachers' mental health in the many ways like actual work has been displayed to diminish side effects of pressure and uneasiness, which can be particularly useful for instructors who might encounter elevated degrees of occupation related pressure [4]. Exercise can also promote feelings of well-being and relaxation, which can help reduce the negative effects of stress [5]. Practice has been connected with higher measures of endorphins, which are synapses that can help temperament as well as lessening vibes of agony and stress [6]. Standard actual activity can help educators who are encountering side effects of despairing, sadness, or unfortunate inspiration work on their mind-set and advance feelings of joy and prosperity [7,8].

Physical activity can help improve quality of sleep, which is important for mental health and well-being in general [9]. Teachers who get enough sleep are better able to handle the pressures of their jobs and less likely to experience burnout or stress symptoms [10]. Overall, physical activity may be a significant strategy for boosting teachers' mental health and well-being. Regular exercise can help teachers decrease stress and anxiety, raise their mood, improve cognitive function, and obtain better sleep [11].

This study precisely sought to answer the following research questions:

1. What kinds of physical activity have the greatest impact on teachers' perceptions of their mental health?
2. What is the relationship between physical activity and perceived physical, mental health and work-related health?

Literature Review

Existing literature has investigated the association of physical activity with physical, mental, and occupational health of teachers. Published evidence indicates that regular engagement with physical activity enhances the health, wellness, and professional functioning of the teachers. The following contain some important empirical insights on this topic.

One study tested the association of various physical activity types with teachers' perceived mental, physical, and occupational health. The study comprised 604 teachers (407 females and 197 males) from 28 primary schools in Belgium. Data were collected by a self-report questionnaire on the levels of regular school teachers' participation in physical activity during leisure time, work, and commute and their perceptions regarding their mental, physical, and occupational health. The results indicated that teachers who took part in more fun activities reported better mental health than those perceived to have less enjoyment when engaging themselves with the physical activity. In addition, 'active' teachers had higher physical health satisfaction ratings than less active teachers. We found that regular physical activity of a positive magnitude was associated with teacher physical health [12] and physical activity was likely to improve teachers' well-being and health care, and have important implications to teachers

Another study evaluated job characteristics and free-time physical inactivity among Brazilian public-school teachers. Studying 2,049 Southern Brazilian professors. Teachers self-reported demographic, occupational, and physical activity data. Teachers' work obstacles were also assessed. The study found 74.6 percent of teachers had insufficient leisure-time physical activity. Work was hampered by time, fatigue, and inspiration. The study indicated that female professors and those with higher workloads exercised less [13]. One more author investigated how a group-based physical activity intervention during free time affected teachers' work-related outcomes such as burnout, job satisfaction, and job engagement. The study included 102 teachers, 89 females and 13 males, from four public primary schools in Spain. The researchers randomly assigned the teachers to either a control or an intervention group for physical activity. The physical activity intervention group participated in a 12-week group

exercise programme while the control group did nothing. At the beginning and end of the intervention, teachers' fatigue, job satisfaction, and work engagement were measured using validated questionnaires [14]. The relationship between physical education teachers' poor health, psychological need suppression, and job stress was studied in that authors included 232 physical education teachers from public schools in the United Kingdom, 132 females and 100 males. The researchers used a self-reported questionnaire to learn about the teachers' symptoms of illness, psychological need thwarting, and job pressure. The questionnaire also asked about the instructors' demographics and work-related aspects. The study showed a relationship between the health symptoms of physical education instructors and occupational stress. The researchers also observed that obstructing psychological needs influenced the association between health symptoms and job pressure [15]. The study focuses on the physical and psychological work-related risk factors for male and female music instructors experiencing neck and shoulder discomfort. The researchers had 105 music professors recruited from two Swedish music academies; 48 of the instructors were male, and 57 female. They used questionnaire responses from instructors to learn about their demographics and employment characteristics as well as to gain insights into their physical activity levels and whether they had neck-shoulder pain. The study showed that neck-shoulder pain amongst both male and female music teachers was related to physical work-related factors including: awkward posture, repetitive movements, and heavy lifting. Neck-shoulder pain was also associated with psychosocial work factors like low social support, high work demands, and decision latitude in female music teachers [16]. The association between teachers' physical activity level and mental health during the COVID-19 pandemic lockdown in Spain was investigated. The survey included 211 Basque Country primary and secondary school teachers, 88.6% of whom were women and 11.4% men. Self-reported surveys measured teachers' physical activity and mental wellbeing. It was found that teachers who had exercised during the lockdown experienced lower-than-normal stress, anxiety, and sadness levels. The study found female instructors had more stress and anxiety than male teachers. [17].

Business-related outer muscle issues (WRMP) in Samsun, Turkey, educators were examined. 56.4 percent of 1,308 city elementary and secondary school teachers were women, 43.6 percent were males. Teachers' demographics, work-related characteristics, and WRMP were collected via self-reported questionnaires. 92.4% of instructors suffered musculoskeletal issues last year, according to the research. Lower back (60.1%), neck (42.3%), and shoulder (32.5%). Female instructors had greater WRMP frequency than male teachers, especially in the neck and upper limbs. WRMP was also linked to long hours, standing, and large loads. Furthermore, teachers who engaged in regular physical activity reported WRMP less frequently [18]. Elderly workers (50+) had worse job performance perceptions. Physical and mental demands, job control, and workplace social support also affected perceived work capacity [19]. A survey discovered that actual work has a significant impact on mind capability and mental execution, which can lead to better scholarly execution. The review also stressed the importance of physical exercise in preventing diabetes, cardiovascular disease, and obesity. The authors suggested adding physical exercise to school curriculum to improve children' academic performance and health [20]. A work recuperation approach to conduct a review on the relationship between non-work time activities, business related weariness, and commitment among educators was used. Low-effort non-work activities, including reading, were associated with increased teacher productivity. On the other hand, educators whose personal lives included demanding tasks like child care were more likely to report exhaustion at work. Teachers' weariness may be reduced and their involvement in the classroom can be increased if they strike a balance between high-effort and low-effort activities in their free time, as emphasised by the research [21]. Work-related stress was found to lower health-related quality of life. Age, education, and employment were also linked to health-related quality of life and workplace stress. To improve health-related quality of life, occupational stress treatments are needed, especially for vulnerable socio-demographic groups [22]. A cross-sectional study on job instability and gender disparities in psychosocial hazards and work-related stress was conducted. Employment instability increased work-related stress, but psychosocial hazards decreased it. Women reported higher psychological risks than males, according to the research. The study emphasises tackling employment

uncertainty and psychological concerns to minimise workplace stress, particularly for women [23,24,25]. Leisurely physical activity, sports, and household or garden labour reduced depression. Yet, work-related physical exercise did not lessen depression. The study investigates work-related physical and psychological risk factors of male and female music instructors with neck and shoulder pain. The researchers recruited 105 music professors from two Swedish music academies (48 males and 57 females). They collected responses via questionnaires used by the instructors, and explored their demographics and employment characteristics, as well as physical activity statistics and if they had neck-shoulder pain. The present analysis revealed that neck-shoulder pain among male and female music teachers could be linked to factors including physical work such as awkward posture, repetitive movement, and heavy loads. Neck-shoulder pain was related to psychosocial work related factors such as low social support, high work demands, and decision latitude in female music educators [26]. The relationship between teachers' physical activity level and mental health during the COVID-19 lockdown period in Spain was investigated. The survey was conducted across 211 Basque Country primary and secondary school teachers, of whom 88.6% were women and 11.4% men. Self-reported surveys assessed teachers' physical activity and mental health. Teachers who exercised during the lockdown experienced stress, anxiety and sadness less than the normal range of anxiety and sadness. The study showed women instructors experienced more stress and anxiety than male teachers.[27].
Workload was shown to have a positive correlation with burnout and depression, whereas thoughts about one's own self-efficacy were found to have a negative correlation with workload. In addition, it was discovered that self-efficacy beliefs act as a mediator between burnout and workload [28]. The prevalence of work-related burnout syndrome among Serbian special education teachers who work with children with developmental disorders was the subject of an investigation was examined. According to the findings of the study, high levels of burnout were linked to low levels of assertiveness as well as a lack of previous job experience [29]. Educators who were part of the intervention group experienced less emotional exhaustion and were more interested in their job than educators who were part of the control group. The study suggests that teachers' work-related outcomes may be improved by engaging in leisurely physical activity [30]. Depression symptoms linked adversely with moderate-to-vigorous physical exercise and favourably with sedentary behaviour and modest physical activity. Aerobic exercise also reduced depression more than weight training. The findings suggest that older persons may benefit from aerobic and moderate-to-vigorous exercise to reduce depression [31]. In the city of Bahir Dar in Ethiopia, a cross-sectional study was conducted on 431 school teachers. 51.3% of school teachers had shoulder and/or neck pain, according to the study. The survey also found that female instructors had higher neck and shoulder discomfort than male professors. Ergonomics-based therapies and instructional initiatives can help school instructors with shoulder and neck problems [32]. According to self-report and accelerometer data, higher levels of physical activity were linked to better health perceptions. When people exercised more, their health perceptions improved. This study underlines the need of regular physical activity for middle-aged health. The paper examined Indian dentists' awareness of how physical exercise prevents work-related musculoskeletal problems. While the majority of dentists were aware of the benefits of physical activity, only a small percentage regularly exercised, according to the study [33,34]. When it came to reducing stress-related symptoms and improving work-related outcomes among rescue workers, the study found that some emotion regulation strategies were more effective than others. According to the findings, interventions that focus on emotion regulation might be able to help rescue workers feel better [35]. Turkish Physical education teachers' job capabilities was examined. 355 physical education instructors were assessed using standardised questionnaires for demographics, health, work capacity, and job satisfaction. The data showed 76% of instructors had moderate to outstanding job abilities. Age also correlated with health behaviours, job happiness, and work performance. Physical exercise did not affect job ability. The authors believed that Turkish actual training instructors had a moderate work capacity and that promoting good behaviour and work satisfaction might boost it [36]. A technology-based physical activity intervention can improve physical health and well-being at work among employees. The intervention dramatically enhanced participants' work-related well-being, physical health, and

physical exercise [37]. "Examining the Role of Burnout, Sense of Coherence, and Work-Related and Lifestyle Factors" in "Work capacity among upper-optional teachers was examined and the authors investigated the factors that influence upper-secondary school teachers' work ability. Work ability was significantly predicted by burnout and lifestyle factors like smoking and physical activity, according to the study. The authors suggest that interventions aimed at lowering levels of burnout and encouraging healthy lifestyle choices may help teachers perform better in the workplace [38]. A prospective one-year study of intensivists' work-related mental health at a COVID-19 hub hospital was examined and according to the study, intensivists were more likely to experience burnout and stress at work, and the COVID-19 pandemic had a negative impact on their mental health [39]. A cluster-randomized controlled trial that aimed to investigate the effects of an additional organizational health intervention and mindfulness-based stress reduction on teachers' mental health and perceptions of work-related issues in Dutch secondary vocational schools. The study will examine if these treatments improve teacher well-being, stress, and work-related difficulties. The creators recommend that these mediations might be helpful in advancing educator prosperity and diminishing business related pressure in instructive settings [40]. The teachers were more likely to experience stress as a result of either type of violence [41]. Teachers' low levels of physical activity were linked to depression, anxiety, and stress was examined. Low-activity instructors had more stress, anxiety, and depression than active teachers [42]. In the study the connection between depression and various forms of physical activity among 88,522 adults was studied and shown that lower levels of depression are connected with engaging in activities that include strengthening muscles as well as moderate to strong levels of physical exercise [43]. Teachers were less fit because of musculoskeletal issues from work. They suggest that boosting teachers' fitness and physical activity might help them feel better physically [44]. Participating in emotional well-being exercises like unwinding, care, and reflection was related with worked on mental prosperity, work inspiration, and occupation fulfilment among educators [45]. The levels of stress that were experienced in each of the distinct types of work that were investigated were considerably varied [46]. Teachers' feasibility beliefs and motivational outcomes can be negatively impacted by perceived pressures, according to the study, highlighting the need for supportive environments [47]. Instructors who reported greater levels of stress also reported lower levels of physical activity. On the other hand, the study found that teachers who reported higher levels of motivation engaged in more physical activity. In order to improve teacher well-being and levels of physical activity, the study emphasizes the significance of addressing stress and providing opportunities for recovery [48].

Research Methodology:

Sampling:

Convenience sampling was used to select participants from different schools across the India. Participants were required to be currently employed as teachers and willing to complete an online survey as inclusion criteria. There was a total of 200 educators included in this study; 50 of them were female, while the remaining 150 were male. The sample had people with an average age of 38 years old and a standard deviation of 7.6 years.

Measures:

Participants completed an online questionnaire about their average levels of physical activity and their attitude to their mental health. Data were collected using a structured questionnaire comprising three sections. Section A collected respondents' demographic information, including age, gender, educational qualification, teaching experience, institution type, height, and weight. Section B assessed respondents' physical activity using the **International Physical Activity Questionnaire–Short Form (IPAQ-SF)** developed by Craig et al. (2003), which measures the frequency and duration of walking, moderate-intensity activities, vigorous-intensity activities, and sedentary behaviour over the previous seven days. Section C assessed perceived physical health, psychological health, social relationships, and environmental quality of life using the **World Health Organization Quality of Life–BREF (WHOQOL-BREF)** developed by the WHOQOL Group (1998). The WHOQOL-BREF is a 26-item instrument comprising four domains: Physical Health, Psychological Health, Social Relationships, and Environment. For the present study, the **Physical Health domain** was used to assess perceived physical

health, the **Psychological Health domain** was used to assess perceived mental health, and the **Work Capacity** item within the Physical Health domain was considered an indicator of perceived work-related health.

Sporting activities:

Asking how many hours a week they spent exercising in each category and how often. They were also queried about their physical pursuits such as swimming, weightlifting, running, cycling, and team sports carried out. The participants completed a self-reporting questionnaire on their own mental health. This was done to measure their perceived mental health. The items in the questionnaire were classified on a continuum of "I feel joyful," "I feel restless," and "I feel depressed." Using a 1 (strongly disagree) to 5 (strongly agree) Likert scale, participants were asked to indicate in each item how agree or disagree they felt with it.

Statistical Analysis

The data that were collected was coded and analyzed with IBM SPSS Statistics. The demographic characteristics of the respondents and their patterns of physical activity were summarized with descriptive statistics (frequencies, percentages, means, and standard deviations). Cronbach's alpha coefficient was used to assess the internal consistency of the measurement scales. Pearson's correlation analysis was performed to examine the relationships between physical activity, perceived mental health, perceived physical health, and work-related health. Later, multiple linear regression analysis was performed to examine the relationship among physical activity and its predictive power on the three health indicators controlling for age, gender, and BMI. Significance determination was performed at $p < .05$.

Results

Data were analysed using descriptive statistics to describe both the sample characteristics and the patterns of physical activity. As shown in Table 1, a total of 150 women and 50 men (mean age 39 years and standard deviation 7.7 years) participated in the study.

Table 1. Demographic Characteristics of the Participants (N = 200)

Characteristic	Value
Total Participants	200
Female	150 (75.0%)
Male	50 (25.0%)
Mean Age (Years)	39
Standard Deviation (Age)	7.7

Participants reported participating in physical activities such as running, cycling, swimming, weightlifting, and team sports: (1) 3.4 days per week for physical activity; (2) 44.7 minutes (standard deviation = 18.5), shown below in Table 2.

Table 2. Participation in Different Types of Physical Activities (N = 200)

Physical Activity	n	%
Running/Jogging	96	48
Cycling	82	41
Swimming	38	19
Weightlifting	61	30.5
Team Sports	45	22.5
Yoga	74	37

Correlation analysis and multiple regression analysis, along with inferential statistical methods, as shown in Table 3 and Table 4 : are used for assessing the association between physical activity and perceived mental health; physical health as well as work status.

Table 3. Correlation between Physical Activity and Health Outcomes

Variable	Correlation (r)	p-value	Interpretation
Overall Physical Activity and Overall, Health	0.57	0.001	Significant Positive
Swimming and Psychological Well-being	0.45	0.01	Significant Positive
Running/Jogging and Psychological Well-being	0.41	0.05	Significant Positive
Weightlifting and Physical Health	0.5	0.05	Significant Positive
Team Sports and Work-related Health	0.69	0.05	Significant Positive

Table 4. Multiple Linear Regression Analysis Predicting Health Outcomes

Predictor	Outcome Variable	β	SE	t	p
Frequency of Physical Activity	Mental Health	0.38	0.1	5.42	< .001
Duration of Physical Activity	Mental Health	0.26	0.1	3.87	< .001
Frequency of Physical Activity	Physical Health	0.41	0.1	5.11	< .001
Duration of Physical Activity	Physical Health	0.23	0.1	3.29	0.001
Frequency of Physical Activity	Work-related Health	0.46	0.1	6.84	< .001
Duration of Physical Activity	Work-related Health	0.21	0.1	2.95	0.004

Table 5. Regression Model Summary

Outcome Variable	R^2	Adjusted R^2	F	p
Mental Health	0.34	0.32	26	< .001
Physical Health	0.38	0.36	31	< .001
Work-related Health	0.47	0.45	42	< .001

In the research, physical exercise was shown to significantly correlate with perceived mental, physical, and work health. One's perception of mental, physical, and labor health as a function of the frequency and duration of physical activity is positively correlated (r =.57, p =.001). A correlation of r =.45 and a significance level of p =.01 for swimming and jogging, respectively, and a correlation of r =.41 and a significance level of p =.05 for jogging showed a significantly positive correlation with an individual's psychological well-being assessment. Physically active weightlifting was significantly related (r =.50, p =.05), while team sports were associated with better working health (r =.69, p =.05).

The results of the multiple regression analysis showed that the frequency and duration of physical activity were significant predictors of perceived mental health, physical health, and work-related health, even after controlling for age, gender, and BMI. This was the case even after controlling for the variables.

Findings of the study

The findings of this study indicate that the degree of physical activity that teachers engage in is connected to their perceptions of their mental health, physical health, and health related to their profession. These findings are in line with those of other research, which has demonstrated that participating in physical exercise can benefit a wide range of health outcomes. Interestingly, the data

indicate that a variety of forms of physical activity may be linked to a variety of distinct health effects. Swimming and jogging were linked to perceived mental health, weightlifting to physical health, and team sports to work-related health.

The study's findings have significant implications for improving teachers' health and well-being in the classroom. Encourage teachers to participate in team sports, jogging, swimming, weightlifting, and any other physical activity they enjoy in order to improve their overall health and well-being.

Conclusion

Interestingly, the data indicate that a variety of forms of physical activity may be linked to a variety of distinct health effects. Swimming and jogging were linked to perceived mental health, weightlifting to physical health, and team sports to work-related health. The study's findings have significant implications for improving teachers' health and well-being in the classroom. Encourage teachers to participate in team sports, jogging, swimming, weightlifting, and any other physical activity they enjoy in order to improve their overall health and well-being.

Research has shown that taking part in actual activity has a great many gainful outcomes on both mental and actual wellbeing, as well as word related wellbeing. However, not all forms of physical activity provide the same benefits, and the associations between various forms of physical activity and health outcomes may vary from one activity to the next.

The results of this study indicate that teachers' perceptions of their mental, physical, and occupational health are linked to the level of physical activity they participate in. There is some evidence to suggest that various types of physically active work are linked to various health factors. It could be as simple as convincing educators to engage in some form of physical activity for their own health and well-being. There is a requirement for additional review to be led to survey the drawn-out effect of actual activity on the wellbeing and prosperity of instructors.

Implications of the study:

There is a significant correlation between teachers' perceptions of mental, physical, and work-related health and various forms of physical activity. By acquiring a comprehension of the many types of actual work that are connected with various components of wellbeing, conceivable to develop explicit medicines will further develop the general prosperity of educators. One strategy to improve the emotional well-being of educators is to urge them to participate in exercises that incorporate development or some likeness thereof. The significance of this cannot be overstated, given the high rates of stress and exhaustion experienced by a large number of educators. Schools and other educational institutions may be able to assist instructors in better managing their stress levels and improving their overall mental health by encouraging teachers to participate in physical activities like swimming and running. They found that a constructive first step to improve their overall health can be to encourage teachers to have additional physical exercise. This is particularly useful given the teachers' high obesity rates and lack of engagement in physical activity. Educational systems can also implement practices to promote physical activity in their teaching, such as promoting teachers to engage in such activities as weightlifting, to help teachers enhance their physical well-being and lessen their susceptibility to chronic diseases. Another implication is that praising and rewarding teachers for trying to be healthful through their daily physical activities is probably one of the best things teachers can do and should do to become healthy. Considering the high rate of obesity and inactive behaviour in the teachers, this is even more important. It is certainly possible that teachers at schools and other institutions of education could benefit from promotion of physical fitness or the prevention of the development of chronic diseases, by encouraging the instructors to engage in movement like weightlifting. Finally, the study demonstrates how one way of improving teachers' occupational health from a profession standpoint should be to motivate them to be physically active in the classroom. This is even more important because many educators suffer job stress and burnout as a result of the high levels of job stress and burnout on part of them at work. Schools and schools of education can help teachers to develop better relationships with colleagues, and to reduce their job stress levels by recruiting them to sports and physical activities, like team sports.

Limitations and future direction:

Due to the convenience sampling technique which selected the participants for this study, it is also possible that the results may not be generalizable. It has a chance that the sample does not accurately reflect all teachers in India due to its small size. Moreover, self-administered health and physical activity measures were used in this study, which are subject to error and may not capture the true health behaviour of the respondents. The researchers were also unable to explore other underlying processes that might account for these associations, as they only examined the association between perceived health-related outcomes and physical activity. The physiological and psychological mechanisms that underlie the link between teachers' exercise attendance and health outcomes merit further investigation. Further study on the long-term effect of physical activity on teachers' health and wellbeing may also be warranted. This study did not examine the impact of physical activity over time; instead, it only examined associations that can be made between physical activity and numerous self-reported indicators of health at one point in time. Thus, longitudinal research may allow us to gain a better understanding of how much exposure to physical exercise contributes to positively affect educators' health and overall wellness. The effectiveness of other treatments and a range of interventions aimed at increasing interest of instructors to engage in physical activity may also be a focus of future research. Last, further research on barriers and facilitators to physical activities for teachers may develop in the future. Therefore, the factors which influence teachers' involvement in physical activity could determine successful interventions to encourage their engagement in physical activities among such students.

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