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RESEARCH PAPER

Stakeholders' Views and Predictions about the Impact of School Closure due to Covid-19 on Physical and Mental Health of Students With Physical Impairments Studying in Special Education Institution of Lahore

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ABSTRACT

Schools being suspended in 189 countries since April 2020, the entire education system had shifted online due to COVID-19. The study aimed to describe impact of school closure on physical and mental health of students with physical impairment during lockdown perceived by the stakeholders. The quantitative research design with survey method was used. The researchers have selected 100 parents, 30 psychologists, 30 physiotherapists, and 30 teachers of students with physical impairment in Lahore randomly. Four close ended self-made questionnaires were used. Study reveals that there are no significance differences in the perceptions of respondents about impact of school closure on mental and physical health of children with physical impairments based on their demographic characteristics. The prediction is supported (df=188and P=.013) that there is an impact of school closure on physical health of children with physical impairments. We recommended that Live tutorial-based exercise and diet and plan should be managed for students.

KEYWORDS Covid-19, Physical & Mental Health, Physical Impairment, Students

Literature Review

A cluster of common infection was registered in Wuhan, China in December 2019, and the WHO named it Coronavirus 2019 (COV-19) on 11 February 2020. (Wang, et al., 2020) severe ARS coronavirus 2 of the genus beta corona virus, a Kazakh virus, was a NCS with a 79% hereditary similarity of severe ARS coronavirus 2 to the 2003 severe ARS crash (Wang, et al., 2020). WHO named the epidemic an epidemic on March 11, 2020 (Wang, et al., 2020).

Different studies have also shown boost in psychological pain among the public, people with mental illness and health care staff. Overall, there is compelling need to pay more consideration to audience mental health and strategies to help society go through this difficult time.

The crash of COVID-19 began in late December 2019 in Wuhan, China as a case of infection with an unknown etiology, and quickly spread throughout the country and the world (Sahin and Matulak, 2020). Chinese investigators named the virus COVID-19 (Zhu et al2020). On January 30, 2020, the WHO arrange the COVID-19 crash as the sixth community health emergency services (SPHEC) (Bilgin et al., 2020).

On 26th of February 2020, Govt. of Pakistan, announced the first ever case of COVID-19 diagnosed. On the same day, Pakistan's Federal MOH announced another incident in Islamabad. On March 23, 2020, the province went into lockdown (Ali et al., 2020).

Since April 2020, when schools were closed in 189 countries (UNICEF, 2020), the full education system shifted to internet. Although most children benefit from online courses, some of them said about the psychological influence on CWDs. Despite the current situation,

children with previous intellectual and physical disabilities are most at risk. (2020, WHO) For children with such disorders, the difficulty of learning online and the reduction of competitive opportunities that can be complete at home can be overwhelming. Furthermore, one of the most difficult challenges for children with ASD is learning cognitive skills and social interaction (ASD). Their development is hampered by their current social isolation and lack of access to outdoor activities.

Disability is the outcome of physical, cognitive, behavioral, sensory, emotional, and developmental or a combination of these disorders. A person's life can be ruined or developed from birth. And disability is defined as damage to muscles, nerves, skin, or bones that makes it difficult to get up and perform daily activities (Gaddes,1993).

Without a COVID-19 background, children with physical disabilities often face obstacles in their daily lives, such as barriers to group mobility. Children with physical disabilities have a higher risk of depression, loss of life satisfaction and loneliness than the general population (Libraser, 2020).

The words "impaired," "disabled," and "disabled" are often used interchangeably. However, they have very different meanings. Differences in meaning are important to understand the effects of nerve injury on development. The most common references are provided by the World Health Organization (Hersh and Johnson, 2010).

Physical Disability

Physical disability is a condition that interferes with the body's ability to function. Many, but not all, disorders are orthopedic disorders - a term commonly used to describe conditions of the musculoskeletal system (muscles, bones and joints) and sometimes a physically inactive state of the nervous system (brain, spinal cord and nerves) (Gajdosik, 2002).

The WHO defines mental health as a virtue in which an individual recognizes their abilities to cope with the stresses of everyday life and works in partnership with the community they belong to. Recognizes the ability to do, which includes six psychological domains, including self-acceptance, meaning in life, autonomy, healthy relationships, and healthy relationships with others (Mamun & Ullah, 2020). Due to the novel Corona Virus 2019 (covid-19) epidemic, these mental health and emotional distress due to virus infection or fear of death are today amid top PH concerns around the world. As an outcome, many people are developing anxiety, frustration, confusion and post-traumatic symptoms. According to studies, local distance, isolation, social and economic conflict, and misinformation (especially on social media) all contribute to abnormal depression, anxiety, anger, helplessness, loneliness and panic. Do deadly thoughts and attempts can be triggered in extreme situations, and in some cases, suicide. In addition, the incidence of domestic violence in China has tripled since Lockdown (Lebrasseur 2020), and women are under a lot of stress. According to another Indian study, women have higher levels of stress, anxiety, and depression than men. This was due to the relationship period in which all members of the household had to stay at home, which could be taxing mentally and physically.

Infants and children's mental health problems are far more common than physical health problems, and poor mental health in childhood hinders the accumulation of human resources and far more than physical conditions outcome in a labor market (Case, Fertig, And Paxon, 2005 Curry, Stable, Manning, and Rose, 2010 A. A. Goodman, Joyce, & Smith, 2011). Approximately 11% of children between the ages of 8-15-15 suffer from mental illnesses that lead to significant disability (Mercangas et al., 2010). 8 ٪ Children experience "severe emotional distress" each year (Kessler et al., 2012); And about half of all mental health problems in adolescence begin in childhood or adolescence (Kessler et al. 2005). Children with mental health or emotional issues are more likely to receive special education services, repeat grades, perform poorly on standardized tests, and drop out of high school

(Carrie & Stable, 2006 F. Fletcher & Wolf, 2008).)- Mental health problems under treatment can lead to poor grades, drug use and other dangerous behaviors (Bushch, Golberstein, & Myra, 2014). Poor adult health and economic outcomes are linked to the onset of childhood mental health conditions (Kerry, 2009), and the overall effects of poor mental health in childhood far outweigh other health problems in childhood (Case et al. 2005).- Based on the direct expenditure of individuals and families on a large scale, a recent report indicates that the mental health status of newborns and children costs 24 7.247 billion annually (National Research Council and Institute of Medicine, 2009). However, external costs are also significant, as mental health issues in childhood and adolescence are associated with abusive behavior (Bush et al., 2014), low academic performance in the classroom (Ezer, 2008), and addiction in adolescence. And is caused by crime (Bushch et al., 2014). (Carrie & Stable, 2009; Ferguson, Hoover wood, and Ryder, 2007).

Material and Methods

Survey method was undertaken to complete the study. This research begins with the issue of statement, tool development, and explanation of the study population. After the data was collected, it was processed and analyzed on the Statistical Package for Social Science (SPSS).

Population

The target population in Lahore Division. The parents of physically impaired students, psychologists, physiotherapists, and their teachers working in the government and private hospitals, Special educational centers and schools for physically impaired students in Lahore.

Sampling and Sampling Techniques

The researchers recruited 100 parents of physically impaired students, 30 Psychologists, 30 Physiotherapists and 30 Teachers by applying random sampling technique.

Table 1
sample

Respondents	Gender	F	%
Psychologists	male	08	26.7
	female	22	73.3
Physiotherapists	male	18	60
	female	12	40
Parents	male	47	47
	female	53	53
Teachers	Male	17	56.7
	female	13	43.3

Research Instruments and Data Collection

The researchers have collected data from parents, psychologists, physiotherapists, and teachers of students with physical impairments by administrating the self-prepared questionnaires of four different types and version on Google forms on Google Drive. The questionnaires for parents (Cronbach =.73), physiotherapists (Cronbach =.85), psychologists (Cronbach =.78), and teachers (Cronbach =.89), were divided into two sections; the first section covered their demographic profiles. The second section consists of statements to estimate their perceptions about physical and mental health of students with physical impairments. Instruments were developed on Likert 5-point scale with the responses coded as (Strongly agree = 5, Agree = 4, Neutral/Undecided = 3, Disagree = 2, Strongly disagree = 1). The researchers visited schools and hospitals to help the authorities

understand the purpose of the study. The researchers obtained data from respondents from the Lahore Division via "Personal Visit and Google Forms".

After the data was collected, it was tabulated and analyzed via SPSS. After collecting the data, researchers have analyzed the data by using descriptive and inferential statistical procedures (t-tests, ANOVA and Regression). The results of the study were then discussed, and recommendations were made at the end.

Results and Discussion

Table 2
Significance differences in the perceptions based on gender

Gender	N	Mean	Std. Deviation	Std. Error Mean	t	df	sig
Physio Male	8	41.1250	4.25735	1.50520	.664	28	0.512
Female	22	39.9545	4.27035	.91044			
Fathers	46	46.02	46.02	4.996	-.329	97	.742
Mothers	53	46.36	5.137	.706			
Teacher Male	46	2.26	2.2652	.29979	-.763	97	.447
Teacher Female	53	2.3151	.34440	.04731			
Psychologist Male	8	41.1250	4.25735	1.50520	0.665	28	.514
Female	22	39.9545	4.27035	.91044			

Above table showing values of indicate clearly that there are no significance differences in the perceptions of respondents (Physiotherapists (t= .664, df =28 and sig=0.512), Parents (t= -.329 df =97 and sig=0.742), Teachers(t= -.763, df =97 and sig=0.477) and Psychologists (t= .665 df=28 and sig=0.514) about impact of school closure on mental and physical health of children with physical impairments based on their gender

Table 3
Significance differences in the perceptions of respondents based on location /sector

Sector/ location	N	Mean	Std. Deviation	Std. Error Mean	t	df	sig
Physio Public	8	41.1250	4.25735	1.50520	.664	28	0.512
Private	22	39.9545	4.27035	.91044			
Psychologist Public	10	39.7000	5.73585	1.81384	-.548	27	0.577
Private	53	46.36	5.137	.706			
Teacher Public	46	2.26	2.2652	.29979	-.763	27	.447
Teacher Private	53	2.3151	.34440	.04731			
Parents rural	35	45.23	5.065	.856	-1.426	97	.153
urban	64	46.73	4.999	.625			

Above table values indicate clearly that there are no Significance differences in the perceptions of respondents (Physiotherapists from private and public sector (t= .664, df =28 and sig=0.512), Teachers from private and public sector (t= .548-, df =27 and sig=0.557)and Psychologists(t= -.763-, df =27 and sig=0.477) about impact of school closure on mental and

physical health of children with physical impairments based on their job sector public and private and the location of parents urban and rural areas (t=- 14.26-, df =97 and sig=0.153)

Table 4
Significance differences in the perceptions of Physiotherapists based on job scales

(I) Job scale	(J) Job scale	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		F	df	Sig
					Lower Bound	Upper Bound			
BPS 16	17	.73333	1.85920	.696	-3.0814	4.5481	.233		.793
	18	-.60000	2.05967	.773	-4.8261	3.6261		27	
BPS 17	16	-.73333	1.85920	.696	-4.5481	3.0814			
	18	-1.33333	1.98191	.507	-5.3999	2.7332			
BPS 18	16	.60000	2.05967	.773	-3.6261	4.8261			
	17	1.33333	1.98191	.507	-2.7332	5.3999			

Above table depicts that f= .233, df=27and sig= .793 fairly explains that there no significance differences in the perceptions of Physiotherapists, about impact of school closure on physical health based on job scales. All participants working on BPS 16, BPS 17and BPS 18 have same opinion.

Table 5
Significance differences in the perceptions Psychologists based on the disabilities

(I) Disability	(J) Disability	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		F	df	sig
					Lower Bound	Upper Bound			
Cerebral Palsy	Polio	.70000	2.39498	.772	-4.2141	5.6141	.43	27	.958
	Muscular Dystrophy	.23333	1.78511	.897	-3.4294	3.8961			
Polio	Cerebral Palsy	-.70000	2.39498	.772	-5.6141	4.2141			
	Muscular Dystrophy	-.46667	2.25801	.838	-5.0997	4.1664			
Muscular Dystrophy	Cerebral Palsy	-.23333	1.78511	.897	-3.8961	3.4294			
	Polio	.46667	2.25801	.838	-4.1664	5.0997			

Results of ANOVA table indicates (F= .43, df=27, and Sig=.958) that there are no significant differences about impact of school closure on mental and physical health of children based on types of their physical impairment. Psychologists explained same type of impact of school closure on children with Cerebral Palsy, Polio and Muscular Dystrophy.

Table 6
Significance differences in the perceptions of parents based on their socio-economic status

(I) scs	(J) scs	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		F	df	Sig
					Lower Bound	Upper Bound			
Lower Class	Middle Class	1.042	1.234	.401	-1.41	3.49	.426	98	.654
	Upper Class	.141	1.280	.912	-2.40	2.68			
Middle Class	Lower Class	-1.042	1.234	.401	-3.49	1.41			
	Upper Class	-.901	1.244	.471	-3.37	1.57			
Upper Class	Lower Class	-.141	1.280	.912	-2.68	2.40			
	Middle Class	.901	1.244	.471	-1.57	3.37			

Table 6 make clear that F=.426, df=98, and Sig=.654 express that there are no significance differences in the perceptions of parents about impact of school closure on mental health based on their socio-economic status.

Table 7
Mean trends about mental and physical health

Variables	Mean	Std. Deviation	N
Mean mental health	2.3566	.28736	189
Mean physical health	2.2862	.32226	189

Table 7 depicts that the mean score of mental health is higher than the physical health mean score of children with Physical impairments during COVID 19 lockdown.

Table 8
Relationship among school closure, mental health, and physical health

Variables	Correlation	Mean Mental Health	Mean Physical Health	School Closure
Mean Mental Health	Pearson Correlation	1	.044	.165*
	Sig. (2-tailed)		.547	.024
	N	189	189	189
Mean Physical Health	Pearson Correlation	.044	1	.179*
	Sig. (2-tailed)	.547		.013
	N	189	189	189
School Closure	Pearson Correlation	.165*	.179*	1
	Sig. (2-tailed)	.024	.013	
	N	189	189	189

*. Correlation is significant at the 0.05 level (2-tailed).

Table 8 clearly express that there is significant relationship exist (r=.165, sing=.024, N=189) between the impact school of closure and mental health. Since test values (r=.179,

sig=.013, N=189) show that there is also significant relationship found between impact of school closure and physical health of children with physical disabilities.

Table 9
Significance differences in the perceptions of parents about impact of school closure

Variable	health	N	Mean	Std. Deviation	Std. Error Mean	t	df	sig
School closure	Mental health	86	2.3047	.41584	.04484	-.543	187	0.058
	Physical health	103	2.3359	.37491	.03694			

Above table resultant in that (t=-.543, df=187 and, sig= 0.05) that is a significance difference in the perceptions of parents about impact of school closure on mental health and physical health of their children with disabilities of children.

Table 10
Impact of school closure on mental health predicted by psychologists

Model 1	Sum of Squares	df	Mean Square	F	Sig.	R	R square	Adjusted R square	Std. Error of the Estimate
Regression	.421	1	.421	5.209	.024[a]	.165	.027	.022	.28420
Residual	15.104	187	.081						
Total	15.524	188							

Predictors: constant, School closure

Dependent variable: Mean mental health

Table 11
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.077	.124		16.741	.000	1.833	2.322
	School closure	.120	.053	.165	2.282	.024	.016	.224

a. Dependent Variable: Mean mental health

The above table show that the prediction is supported significantly (F=5.209, df=178,df=188,P=.024) that there is an impact of school closure on mental health of children with physical impairments perceived by psychologists.

Table 12
Impact of school closure on Physical health predicted by physio therapists

Model 1	Sum of Squares	df	Mean Square	F	Sig.	R	R square	Adjusted R square	Std. Error of the Estimate
Regression	.629	1	.629	6.223	.013[a]	.179[a]	.032	.027	.31788
Residual	18.895	187	.101						
Total	19.524	188							

Predictors: constant, School closure
Dependent variable: Mean Physical health

Table 13
Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	1.945	.139		14.012	.000	1.671	2.219
	School closure	.147	.059	.179	2.495	.013	.031	.263

The above table show that the prediction is supported significantly (F=6.223,df=187,df=188, P=.013) that there is an impact of school closure on physical health of children with physical impairments perceived by physiotherapists.

Findings

- There are no Significance differences in the perceptions of respondents (Physiotherapists from private and public sector (t= .664, df =28 and sig=0.512), Teachers from private and public sector (t= .548-, df =27 and sig=0.557)and Psychologists(t= -.763-, df =27 and sig=0.477) about impact of school closure on mental and physical health of children with physical impairments based on their job sector public and private and the location of parents urban and rural areas (t=- 14.26-, df =97 and sig=0.153).

- There are no significance differences (F= .233, df=27and sig= .793) in the perceptions of Physiotherapists about impact of school closure on physical health based on job scales

- There are no significant differences (F= .43, df=27, and Sig=.958) about the impact of school closure on mental and physical health of children based on types of their physical impairments.

- There are no significance differences (F=.426, df=98, and Sig=.654) in the perceptions of parents about impact of school closure on mental health based on their socio-economic status.

- Mean score of mental health (2.35) is found higher than the physical health mean score of children with Physical impairments during COVID 19 lockdown.

- There is significant relationship found between school closure mental health and physical health of children with physical disabilities.

- There is a significance (t=-.543, df=187 and, sig= 0.05) in the perceptions of parents about impact of school closure on mental health and physical health of their children with disabilities of children.

- The prediction is supported significantly that there is an impact of school closure on mental health of children with physical impairments perceived by psychologists.
- The prediction is supported significantly that there is an impact of school closure on physical health of children with physical impairments perceived by physiotherapists.

Discussion

The COVID-19 widespread is a non-natural tragedy that can have an impact on the mental health and physical health. According to WHO (2020), the emergence of this tragedy caused stress to various levels of society. This article is leading to find out the effect of school closure due to COV-19 on the physical and mental health of students with physical impairments. Physical handicaps may cause various degrees of weaknesses and incoordination of the limbs which may affect mobility, posture, and manual dexterity. The aim of this study was to explore the impact of school closure on physical and mental health of students of students with physical impairment during lockdown.

This study found that COVID-19 has effects on the physical and mental health of students with physical impairments visible changes on the mood of children, unnecessary fear, increase anger, wander thinking, chronic anxiety, increased hopelessness, decrease motivation, low-level tolerance, self-injurious behavior, lack of self-confidence, lack of self-esteem, become lazy, Anorexia nervosa, (Eating Disorder) Bulimia nervosa, (Eating Disorder) Pica, (Eating Disorder) behavior with friends is bad, he/ she stay alone, muscular strength has become decreased, gained his/ her weight, lack of access to exercise equipment, disturb hand to eye coordination, use of fatty diet effect diet routine, less vitamins diet, less minerals diet, and use of junk food.

Conclusion

The study concluded that there is a serious impact of school closure during COVID-19 on the mental and physical health of students with physical impairments investigated through their parents, teachers, physiotherapists and psychologists regardless of socio-economic status, types of physical disabilities and Basic Pay Scale, gender and location of study participants.

Recommendations

- Schools were closed due to COVID-19 which effect physical and mental health of under study students with physical impairment. Following recommendations were drawn based conclusion.
- Live counseling sessions should be managed for students with physical impairment by using Skype, WhatsApp, and other digital sources.
- Making YouTube tutorial base exercise and diet plan.
- For the physiotherapy session in the student's home, follow all SOP's instructions.
- Teachers should be directing online classes by using digital media.
- Parents must be fastening with teachers, psychologists, and physiotherapist for proper guideline about their children.

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