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Predictors for stress in special education teachers: policy lessons for teacher support and special needs education development during the COVID pandemic and beyond

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ABSTRACT

There has been little research on the challenges facing special education teachers (SETs), since the COVID-19 pandemic. This study aimed to identify SETs predictors for stress and barriers to teaching effectiveness. Using a mixed methods cross-sectional design we sampled six public sector special needs institutes. A total of 205 quantitative surveys and 21 qualitative interviews were collected, respectively. Logistic bivariate regression results revealed seven factors predicting higher stress in SETs and qualitative themes further shed light on barriers to teacher efficacy. We conclude with key recommendations for the Special Education Sector and support for SETs, with implications for other developing regions.

Abbreviations: SET: special edcation teachers; SSN: students with special needs

Introduction

Special education teachers (SETs) are neglected professionals not just in the developing world, but across the globe (Welch, 1996). The global literature suggests that SETs face considerable stress during work delivery and care provision of students with special needs (SSN; Horne & Timmons, 2009; Kaufhold et al., 2006; McKay, 2016; Pearson et al., 2003). Known reasons for SETs facing work stress include: (i) inability to gain adequate training (Crispel & Kasperski, 2021), (ii) lack of support from administration and employer (Strydom et al., 2012), (iii) excessive role burden (De Stasio et al., 2017), and (iv) feeling that students are not gaining or learning from their efforts (Kristiana & Hendriani, 2018). Experiencing stress at work may lead to compounding problems at the workplace for SETs, including: (i) inability to provide adequate care or teaching quality for SSN (Gersten et al., 2001), (ii) aggravation of other mental health problems such as anxiety and depression (Ferguson et al., 2012), and (iii) job exit (Firestone, 2014).

Recent scholarship suggests that the level of stress for teachers may be greater since the COVID-19 pandemic, due to having to adapt to new methods of teaching (Glessner & Johnson, 2020; Klapproth et al., 2020), or not being supported with options or resources for

online teaching (Ayda et al., 2020; Toquero, 2020). Most SETs across the developing world are facing similar challenges due to weak infrastructure and inability to continue teaching online due to limited access to technology. With the first wave of COVID-19 breakout globally in February 2020 and the erratic lockdown situations most special needs institutes have faced closure. SSN have been reported to suffer due to loss of learning, communication, attachment with SET, and overall progress (Khlaif et al., 2021). This has been a cause of great stress and worry for students, families, and teachers. It is also true that primary attention during the pandemic has been given to understanding the epidemiology of the disease, promoting public health awareness, and providing distance learning opportunities for regular students (Gerard et al., 2020; Schleicher, 2020). In this way, research on the special needs education sector and SETs has been a neglected area.

South Asia has a cultural history of neglecting its special needs population and remaining slow in adopting educational support and teaching approaches for SSN (Miles, 1997). In Pakistan, it is estimated that there are 35 million people with special needs (Mitra & Sambamoorthi, 2014), but only 5% of the SSN of the country are enrolled in school (Hafeez, 2020). The special needs education sector in the country has been criticized for its lack of progressive development (Akram & Bashir, 2012; Haider, 2008; Pasha & Education, 2012). Critical problems include: (i) neglect to recognize many disabilities and plan appropriate educational policy for each, (ii) lack of inclusive education opportunities, which would facilitate integration, and (iii) inadequate monitoring of special needs institutes (Ahmed et al., 2016; Haider, 2008).

The majority of the special needs institutes run by the government are located in the Punjab province, and can be found only in some of the large urban cities. Other known problems facing SETs in the country include inadequate training and a lack of policy attention for professional development (Fontana & Lari, 2001; Khan, 1998; Rizvi Jafree & Burhan, 2020). Most salient is that no efforts have been made to support SSN during the pandemic, with regard to remote learning or advanced preventive assistance in schools (Manzoor, 2020). This is of grave concern considering that SSN may be unable to adopt preventive behaviors and thus may face greater susceptibility to coronavirus and other infections.

AIM of the study

To the best of our knowledge, there are no studies yet from Pakistan investigating the challenges faced by SETs, since COVID-19 or before it. Research related to this area is also neglected across South Asia and other developing regions. Our aim in this study was to identify: (i) factors causing greater stress in SETs since the pandemic and (ii) specific barriers preventing SETs from delivering the best teaching services to SSN since the pandemic. The study has focused on public sector SETs, as it is the public sector that is integral in supporting the majority lower-middle income class population of the country, estimated at above 100 million people. It is hoped that this study will provide impetus for improving policy development for special needs education overall, and for improving support provided to teachers of special education. We also believe that much of the problems facing SETs are common across the developing world and that our findings will be of relevance for policy development for special needs education sectors across other countries.

Methods

This paper is part of a wider mixed methods research, which attempts to understand the challenges faced by SSN, their families, and teachers, and the socio-structural support available to them in the country. Ethics approval for this study has been taken from the Ethics Committee of the Institutional Review Board of the Forman Christian College University. No names of the institutes have been taken in the study and the anonymity and confidentiality of all participants has been maintained.

Sample

Permission for data collection was sought by the Special Education Department, Punjab. The Special Education Department of Punjab oversees and administrates the public sector special needs institutes, which are currently providing services to the following categories of SSN: (i) hearing impaired, (ii) visual impaired, (iii) physically disabled, (iv) mentally challenged, and (v) slow learners. The inclusion criterion for our study was SETs: (i) currently employed in public sector special needs institutes in Pakistan, and (ii) with minimum 1 year of teaching experience of students enrolled in primary and secondary classes. Based on permission, we were able to sample SETs from six special needs institutes in Punjab, which is the most populated province in Pakistan with more than 53% of the country's population. The special needs institutes where teachers were sampled had students enrolled between the ranges of 112–259 students. One center was sampled from each of the following cities of Punjab: (i) Lahore, (ii) Gujranwala, (iii) Islamabad, (iv) Rawalpindi, (v) Bhawalnagar, and (vi) Multan.

Data collection

Data was collected by the second and third authors of this study from September 2020 to November 2020. Two research assistants, who had an MPhil in Education, were recruited for assistance in data collection and were trained by the authors over a two-day period. Data was collected at the special needs institutes in a private room. A total of 205 teachers completed the quantitative survey. We contacted SETs for follow-up qualitative interviews and conducted a total of 21 interviews until we reached saturation point.

Tools

A cross-sectional survey was used to collect the data. The survey included 24 closed-ended quantitative questions (Supplementary File 1). The questions were taken from an international survey that aimed to measure stress in special need teachers (Kebbi, 2018). The responses were defined with a 5-point Likert scale (Strongly agree–agree–undecided–disagree–strongly disagree). Additionally, we asked respondents if they would like to participate in qualitative interviews (Supplementary File 2). Two broad questions in the open-ended interview guide include: (i) listing three of the biggest challenges facing SETs and (ii) listing recommendations for improved learning of SSN. Though all SETs in Pakistan have studied in the English language, which is the official study language in the country, for

convenience the survey was presented in both English and the local language Urdu. Translation in the local language was done by the second author, who is fluent in both languages, through the forward backward method (Maneesriwongul & Dixon, 2004).

Data analysis

Data was entered into Excel and then transferred to SPSS 21.0 for data analysis. Both descriptive statistics and bivariate regression was used to analyze the data. Descriptive statistics have been used to report frequencies and percentages, whereas simple bivariate and multivariate binary logistic regression has been used to identify association between the dependent variable and other study variables. For this study, the dependent variable is the perceived stress reported by the SET. For bivariate regression analysis, "disagreement" has been scored "0" and "agreement" has been scored "1." In the multivariate logistic model, all variables have been controlled for age and teaching years (as continuous variables). Odds ratio with 95% confidence intervals and p-values were calculated; and the significance level was assigned at 0.05.

The qualitative data was recorded telephonically by audio and then transcribed to Microsoft Word by the second author. Interviews were coded manually by the first two authors independently in order to generate themes (Saldaña, 2015). Common themes were discussed and finalized with the help of the third author. In order to confirm qualitative findings, we held meetings with three SETs who did not participate in the study and also two administrators of special needs institutes (Healy & Perry, 2000). We were able to gain agreement that our qualitative findings represented the common challenges and barriers faced by SETs in the public sector special needs institutes of the country.

Results

Quantitative findings

Socio-demographics
Majority of the SETs who responded are women (70.7%), and between the ages of 20 and 29 years (66.3%; Table 1). Most of the participants have a Master's degree in Education (55.1%) and have been teaching SSN since 1–6 years (59.0%). SETs in this study are predominantly teaching SSN from lower classes, between grades 1 and 5 (53.7%) or grades 6 and 10 (39.0%). Nearly, all the SETs are teaching between 1 and 20 students in a class (87.8%) and have received some training in the last 12 months (94.6%). Majority agree that they feel stress regarding how little is being done for SSN (72.2%).

Descriptive statistics

Cross tabulation with variable of stress shows chi-square significance for a number of variables, including: (i) special needs curriculum is inadequate, (ii) low budget allocation, (iii) insufficient training of SETs, (iv) lack of support for online and blended teaching, (v) lack of time to independently adapt syllabus and teaching material, (vi) home environment prevents student learning, and (vii) worry for the future of the SSN (Table 2). No significant results were found for associations with socio-demographic variables of participants.

Table 1. Socio-demographic variables of special needs teachers, in public special needs schools of Punjab ($N = 205$).

Variable	Frequency (%)
Gender	60 (29.3%)
Male	145 (70.7%)
Female	
Age	136 (66.3%)
20–29 years	34 (16.6%)
30–39 years	35 (17.1%)
40–49 years	
Last degree attained	113 (55.1%)
Masters	92 (44.9%)
MPhil	
Teaching SSN since	81 (39.5%)
1–3 years	40 (19.5%)
4–6 years	25 (12.2%)
7–9 years	59 (28.8%)
≥ 10 years	
Teaching number of students in one classes	110 (53.7%)
Grade 1–5	80 (39.0%)
Grade 6–10	15 (07.3%)
Grade 11–12	
Number of students in one class	180 (87.8%)
1–20	22 (10.7%)
21–25	03 (01.5%)
26–35	
Have received training in last 12 months	194 (94.6%)
Yes	11 (5.4%)
No	
Experience stress as a SNT	148 (72.2%)
Strongly Agree/Agree	57 (27.8%)
Undecided/Disagree/Strongly Disagree	

Table 2. Descriptive statistics for study variables, and chi-square results for association with stress ($N = 205$).

Variable	f (%)	Chi square p value
In general, how stressful do you find being a teacher for special needs	131 (63.9%)	N/S
Strongly Agree/Agree	74 (36.1%)	
Undecided/Disagree/Strongly Disagree		
How often do you feel special needs education should be inclusive	139 (67.8%)	N/S
Strongly Agree/Agree	66 (32.2%)	
Undecided/Disagree/Strongly Disagree		
How often do you feel the special needs curriculum is inadequate	120 (58.5%)	**<0.05**
Strongly Agree/Agree	85 (41.5%)	
Undecided/Disagree/Strongly Disagree		
How often do you feel the resources at school are inadequate	155 (75.6%)	**<0.05**
Strongly Agree/Agree	50 (24.4%)	
Undecided/Disagree/Strongly Disagree		
How often do you feel the that the training for special needs education in inadequate	138 (67.3%)	**<0.001**
	67 (32.7%)	
Strongly Agree/Agree		
Undecided/Disagree/Strongly Disagree		
How often do you feel the need for online and blended teaching	155 (75.6%)	**<0.005**
Strongly Agree/Agree	50 (24.4%)	
Undecided/Disagree/Strongly Disagree		
How often do you feel that support from administration of school is inadequate	150 (73.2%)	N/S
Strongly Agree/Agree	55 (26.8%)	
Undecided/Disagree/Strongly Disagree		

(*Continued*)

Table 2. (Continued).

Variable	f (%)	Chi square p value
How often do you feel you have no time for syllabus development	159 (77.6%)	**<0.05**
Strongly Agree/Agree	46 (22.4%)	
Undecided/Disagree/Strongly Disagree		
How often do you feel parents are not supportive for the development of child	166 (81.0%)	N/S
Strongly Agree/Agree	39 (19.0%)	
Undecided/Disagree/Strongly Disagree		
How often do you feel the home environment prevents student learning	157 (76.6%)	**<0.05**
Strongly Agree/Agree	48 (23.4%)	
Undecided/Disagree/Strongly Disagree		
How often do you worry for the future wellbeing of students	157 (76.6%)	**<0.05**
Strongly Agree/Agree	48 (23.4%)	
Undecided/Disagree/Strongly Disagree		

Note: Adjusted odds ratio have been calculated holding age and income constant.
P values: *<0.05; **0.005; ***0.001.

Bivariate regression results

Table 3 presents the adjusted odds ratio for higher odds of stress in SETs. Adjusted odds ratio results for the following variables show higher odds for feelings of stress in SETs when there is: (i) insufficient training of SETs (OR: 4.82, 95% CI: 2.04–6.41), (ii) lack of support for online and blended teaching (OR: 2.82, 95% CI: 1.17–4.75), (iii) low budget allocation (OR: 2.07, 95% CI: 1.03–3.64), (iv) lack of time to independently adapt syllabus and teaching material (OR: 1.89, 95% CI: 1.03–3.80), (v) inadequacy in

Table 3. Bivariate regression results for odds of special needs teachers suffering from stress in teaching SSN during the pandemic and teaching support.

Variable	OR (CI) P-value	AOR (CI) P-value
In general, how stressful do you find being a teacher for special needs	1.06 (0.56–2.01)	1.07(0.57–2.04)
Very Frequently/Frequently	1	1
Infrequently		
How often do you feel special needs education should be inclusive	1.16 (0.60–2.25)	1.15 (0.59–2.55)
Very Frequently/Frequently	1	1
Infrequently		
How often do you feel the Special needs curriculum is inadequate	1.87 (1.10–3.48)*	1.88 (1.01–3.59)*
Very Frequently/Frequently	1	1
Infrequently		
How often do you feel the resources at school are inadequate	2.04 (1.02–3.58)*	2.07 (1.03–3.64)*
Very Frequently/Frequently	1	1
Infrequently		
How often do you feel the that the training for special needs education in inadequate	4.87 (2.06–6.46) ***	4.82 (2.04–6.41) ***
Very Frequently/Frequently	1	1
Infrequently		
How often do you feel the need for online and blended teaching	2.92 (1.22–4.96)**	2.82 (1.17–4.75)**
Very Frequently/Frequently	1	1
Infrequently		
How often do you feel that support from administration of school is inadequate	1.34 (0.65–2.74)	1.33 (0.64–2.75)
Very Frequently/Frequently	1	1
Infrequently		
How often do you feel you have no time for syllabus development	1.97 (0.98–3.95)*	1.89 (1.03–3.80)*
Very Frequently/Frequently	1	1
Infrequently		
How often do you feel parents are not supportive for the development of child	1.19 (0.55–2.55)	1.20 (0.55–2.59)
Very Frequently/Frequently	1	1
Infrequently		

(*Continued*)

Table 3. (Continued).

Variable	OR (CI) *P*-value	AOR (CI) *P*-value
How often do you feel the home environment prevents student learning	1.62 (1.04–3.52)*	1.54 (1.00–3.76)*
Very Frequently/Frequently	1	1
Infrequently		
How often do you worry for the future wellbeing of students	1.82 (1.01–3.61)*	1.74 (1.06–3.49)*
Very Frequently/Frequently	1	1
Infrequently		

Note: Adjusted odds ratio have been calculated holding age and income constant.
P values: *<0.05; **0.005; ***0.001.

special needs curriculum (OR: 1.88, 95% CI: 1.01–3.59), (vi) worry for the future of SSN (OR: 1.74, 95% CI: 1.06–3.49), and (vii) lacking home environment, which prevents student learning (OR: 1.54, 95% CI: 1.00–3.76).

Qualitative findings

Socio-demographics

A total of 21 SETs participated in the qualitative interviews. The majority of participants are as follows: (i) female (*n* = 14); (ii) between the age of 20 and 29 years (*n* = 9); (iii) holders of a Master's degree (*n* = 11); (iv) teaching for more than 3 years (*n* = 10); (v) currently teaching classes 1–5 (*n* = 12); and (vi) teaching between 15 and 20 students in one class (*n* = 18).

Findings

Nine themes were discovered related to barriers for teaching effectiveness in SETs, including (Table 4): (i) Dependency on general education curriculum; (ii) Understaffing and high student to teacher ratios; (iii) Lack of specialized and comprehensive training; (iv) Shortages of resources and finances at special needs institute; (v) Low self-efficacy and feelings of

Table 4. Summary of qualitative findings.

Dependency on general education curriculum	- Inability to modify the general education curriculum or implement it as it is for SSN
	- Promotion of rote learning, without the use of skill-based learning
	- Lack of integration of physical education, pictorial information, video-based learning, vocational skills, realia- like balls and cuboids, and braille books.
Understaffing and high student to teacher ratios	- Excessive teacher–student ratios and understaffing
	- Negligence faced by students in large classes
	- No provision of one-on-one sessions, which is needed for some disabilities
Lack of specialized and comprehensive training	- Lack of specialized training
	- Use of old concepts and redundant methods, which does not help SSN
	- Regular training is needed for disability identification and management and psychological health of students
	- Need for practical training (not just verbal and theoretical) which is culture and region-specific

(*Continued*)

Table 4. (Continued).

Shortages of resources and finances at special needs institute	- Lack of budget allocation at centers, with critical shortages of tables, chairs, teaching material, and transport stipends - Unable to adopt modern and improved teaching styles due to lack of finances - SETs have to pool their own money or hope for external donations to support student learning objectives
Low self-efficacy and feelings of stress	- Hopelessness and despair due to lack of administrative support for resources and evaluation - Low pay prevents SETs from using their own funds for necessary teaching material, leading to low self-efficacy - Fear of retribution and dismissal if they raise a voice for needed reforms - Frustration on behalf of SSNs and their opportunities for the future
Inability to teach remotely and ensure preventive practices for infection control	- SSN are unable to observe preventive behavior against infection and need extra staff to be hired to support them - School closure due to the pandemic and repeated lockdowns had caused setbacks in student learning and comfort-level with SETs - Public school centers are high risk settings for infection spread - Concern that even with technological access remote learning for SSN would require curriculum development and assistance from parents, which is not possible without major government intervention
Problems with administration	- Lack of support from the administration for resource allocation or teacher involvement in curriculum development - Unfair assessment and evaluation of SETs (assessed on rote learning rather than skill development) - Red-tapism and lack of autonomy to make necessary changes - Mismanagement of funds and resources - Punitive and blame-shifting administration in the face of parents complaints
Federal and provincial governance issues	- Lack of government investment and provision of budget, resources, timely payment of utility bills of center, and transport for SSN - Misallocation of specialized staff, with the wrong SETs being assigned to work with disabilities they are not trained in - Unfair government inspections which forces SETs to misrepresent work (i.e.- meeting general education curriculum targets, which do not match the needs of SSN)
Disadvantaged home environment.	- SSN come from poor families who need monthly cash transfers and transport support to secure retention and attendance - Lack of parental literacy and awareness contributes to slower learning and low support for SSN - SSN from joint families need extra support for confidence-building as they face home-based neglect and stigma

stress; (vi) Inability to teach remotely and ensure preventive practices for infection control; (vii) Problems with administration; (viii) Federal and provincial governance issues; and (ix) Disadvantaged home environment.

Dependency on general education curriculum

The main concern shared by all SET participants was that they had to use the general education curriculum for students: "*We shorten the general education curriculum and implement it.*" Another problem in teaching style was described as "*rote learning,*" without the use of skill-based learning: "*We teach them theoretically, when what they need is skill-based and practical learning to help them survive in the future.*" Participants also mentioned that the exclusion of physical education for SSN was counterproductive to their wellbeing: "*The children are full of energy and need physical exercise. Asking them to sit in class all day is cruel and unhealthy.*"

SETs emphasized the following elements that needed to be added to the curriculum for SSN: "*pictorial information,*" "*video-based learning,*" "*vocational skills,*" "*realia-like balls and cuboids,*" and "*braille books.*"

Understaffing and high student to teacher ratios

SETs described their inability to give attention to students due to excessive teacher–student ratios: "*I have 6 students with visual impairment and 12 hearing impaired students. I am unable to satisfy the needs of all.*" Another SET described internationally accepted ratios and the injustices faced due to understaffing: "*The recommended student–teacher ratio is 1:4, but in our centres it is 1:27. Is this fair to the students or us?*" Another participant described the negligence faced by students in large classes: "*I have 6 ADHD (attention deficit hyperactivity disorder) students, in a class of 18. So if even one of them becomes hyper, I have to give all my attention to that one student . . . and I am unable to support the other students in the class during that time.*" One SET highlighted: "*Many SSN are in need of one-on-one sessions, otherwise they are unable to benefit.*"

Lack of specialized and comprehensive training

Participants complained about the lack of specialized training: "*There is no specialized or extensive training for different special needs . . . the teachers continue to use old concepts and redundant methods.*" Participants also mentioned the need for regular training for disability identification and management: "*We do not have training in how to identify disabilities. Even within a disability, there are various levels from severe to mild.*" One participant described the problems with the training they did receive: "*Trainers usually collect some material from other countries and present it verbally. There is no practical training or consideration of the culture of our society.*" Other participants highlighted the need for training to support the psychological health of students: "*There is only one psychologist in the centre, who is unable to manage the needs of all the students. We need training in how to support students emotionally and behaviourally.*" Consequences of lack of training were discussed to include "*false diagnosis,*" "*lack of empathy,*" "*labelling of child*" and "*worsening behavioural and academic problems.*"

Shortages of resources and finances at special needs institute

Participants described the lack of budget allocation at their center: "*We have failed to provide students with proper tables and chairs . . . or books and uniforms on time . . . the idea of more advanced teaching material is a dream.*" A SET described their belief that due to lack of finances the special needs institute was unable to develop: "*The institution just runs on an auto mode, without any investment or growth.*" Another participant highlighted that due to limited finances: "*the teaching remains focused on traditional strategies and we cannot adopt modern approaches which require investment.*" Other SETs mentioned that due to a lack of finances at the center, they were compelled to: "*buy materials for small activities themselves or ask the parents.*" One SET mentioned that they were also dependent on external donations: "*Our Principal is always trying to get NGOs to donate.*" Participants

highlighted which basic resources were not being supplied: (i) "*teaching aids and gadgets*," (ii) "*books*," (iii) "*medical support and hearing aids*," (iv) "*multimedia resources or modern technology for learning*," and (v) "*transport stipends.*"

Low self-efficacy and feelings of stress

Many participants described their hopelessness and despair, questioning if it was even worth it to run the special needs institutes: "*We keep waiting for teaching materials for the whole year. Honestly, it seems like we are baby-sitting the SSN for 8 hours ... it all seems so pointless ... sometimes I think it would be better if they go somewhere else, even for an hour, just to learn a skill.*" Participants described how, despite their personal resolve, they were unable to help the students due to a lack of opportunities: "*Sometimes we think of using our mobiles to share learning material from Youtube, but there is no Wifi connection and our mobile data is limited.*" Another SET described that their own lack of finances prevented them from doing enough for the SSN: "*When we started off, we had big dreams to help these children. For example, last month was Pakistan's Independence Day and the management asked us to buy materials for the function, as we did last year. We said no this time, as we cannot afford to keep paying from our own pockets for school events.*" Another participant shared that they wanted to make changes for the benefit of the SSN, but felt incapable and feared retribution: "*We want to raise our voice, but are also scared about losing our jobs.*" Participants further shared their stress in being unable to help SSN in basic life skills: "*We are unable to teach them how to use washrooms, eat in a restaurant, manage money, or even make an emergency phone call.*" Another SET revealed: "*I feel frustrated all the time that my students are not being provided with what they need and deserve.*"

Inability to teach remotely and ensure preventive practices of students for infection control

SETs shared the challenges they faced since schools opened in September 2020 after the pandemic lockdown (which started in March 2020): "*Most of the SSN are unable to observe preventive behaviour ... like maintain masks or recognize when they have to wash their hands.*" Participants shared how the school closure due to the pandemic had caused setbacks in student learning: "*SSN need consistent time and effort. The many months at home has affected their development and comfort-level with us.*" Participants also described the public school centers that created a greater risk for infection spread: "*The rooms are small with little space to move around, so it is impossible to maintain social distancing.*" Some SETs shared concern for the future as news of a second lockdown and school closure were circulating: "*Most of the students and teachers do not have computers or Wifi for remote learning.*" Others argued that even with technological access remote learning for SSN would require curriculum development and assistance from parents, which did not seem likely without major government intervention. One SET recommended that instead of remote learning it would be better to: "*hire staff to support SSN at school for protective measures while teachers focus on learning.*"

Problems with administration

SETs complained about the lack of support from the administration in the learning and skill-development of SSN: "*The administration only checks the daily progress reports made by teachers and the copies of students. Many of us end up completing the copies of students, just to keep our jobs.*" Participants shared that administration needs to shift focus to assessing teachers for: "*Skill development, placement evaluation, diagnostic evaluation of students, and teaching modification based on student needs.*" One participant described the red-tapism and lack of permission to make changes: "*The administration did not allow me to bring an LCD from my home and use it to teach my students.*" Other SETs complained about mismanagement of funds: "*The administration refuses to spend the limited funds they have, as they want to escape an audit.*" One SET described how they were expected to perform custodial staff duties, which compromised time spent on teaching: "*The administration has asked the school aya (maid) to clean only once a day. We have to manage the cleaning of the class during the day. If a child vomits we are expected to stop teaching and start cleaning.*" Some SETs complained that the administration was excessively punitive: "*If there is any problem with the students or complaints from parents, the administration blames us.*"

Federal and provincial governance issues

SETs described the challenges with regard to government investment and provision: "*The government has forgotten us – it seems as if they have opened these centres just for publicity.*" A SET highlighted that their special needs institutes were allocated only one bus, which could not transport all the students: "*The bus provided to the centre has a capacity to seat 32 students . . . instead it is expected to transport all the 150 students.*" Another participant described how the government: "*does not allocate funds for petrol.*" Yet another SET complained: "*At times there are delays in the payment of building rent and the utility bills, which creates stress for the administration and for us as well.*" Another SET discussed the problem of misallocation of specialized staff: "*Seats for a special disability end up being utilized by some other specialization. It is common to see a teacher, specialized in teaching the blind, working on the vacancy of hearing impairment.*" One SET also discussed the problems of unfair government inspections that forced them to misrepresent work: "*When inspections are held, we try to show that the students have completed the general education syllabus, even though many students could not cover it.*"

Disadvantaged home environment

SETs described the challenges facing SSN from their family circumstances: "*Our students come from poor families. The government pays PKR 800 (USD 4.99) per month as a stipend to these children, which keeps parents motivated to send them to school. However, the parents cannot afford to send them for skill training.*" Other SETs described the lack of parental literacy and awareness in how to support their children: "*The parents are unable to help or reinforce a concept at home, which affects the development of the children.*" One SET recommended: "*We need to give short trainings to the parents, for example, teaching them sign language would help the SETs get assistance on two fronts.*" Other SETs highlighted that SSN from joint families need support for confidence-building from a wider range of

significant others: "*It would be better if grandparents, siblings and all household members living in the joint family attend awareness sessions to improve support and reduce the stigma allocated to children with special needs.*" Another participant shared their belief that ultimately the stability of SSN comes from the home: "*If the children come to school unhappy and restless we cannot do much for them here.*"

Discussion

In this study mixed-methods data was collected from public sector SETs to identify factors that caused greater stress in SETs, and ascertain the main challenges and barriers preventing SETs from delivering the best teaching services during and after the pandemic. This study represents findings from major cities of Punjab, the most populated province of Pakistan. Quantitative results identify that higher stress in SETs is associated with insufficient training, inability to adopt different teaching methods for online and blended teaching, and inadequacy of the curriculum. Our qualitative data also confirms that SETs face stress due to lack of training support, and highlights the demand by SETs for specific training needs, including: (i) diagnosis and identification of different disabilities, (ii) practical application and skill development of SSN, and (iii) psychological counseling for SSN. International literature also confirms that SETs need to be provided comprehensive pre-service training (Avramidis et al., 2000; Bradshaw & Mundia, 2006; Breton, 2010; Gao & Mager, 2011; Nonis & Tan, 2011); and also regular structured training during service (Cheney et al., 2002; Darrow & Adamek, 2017; O'Gorman & Drudy, 2011; Ozcan & Uzunboylu, 2015; Tsakiridou & Polyzopoulou, 2014).

Our findings also reveal that special needs education in Pakistan is using the general education curriculum, without modification for special needs, which prevents skill-based learning and practical education. Other research corroborates that unless curriculum modification, ancillary services, and supplementary aids are integrated in the general education curriculum, SSN will not benefit with respect to learning outcomes (Ajuwon, 2008; Fakolade et al., 2009; Kurth et al., 2019; Lieber et al., 2008; Nikolaraizi & Mavropoulou, 2005).

The quantitative findings of this study identified that greater stress in SETs is associated with low budget allocation and lack of time. Our qualitative data further elaborates that shortages in resources and finances prevented SSN from being provided with vital learning material and resources, including chairs, tables, books, and specific learning material for SSN. It was highlighted that due to low and erratic government allocation of funds, the special needs institutes was dependent on teacher contributions and NGO donations for teaching materials and expenditure for small events. Understaffing meant high student–teacher ratios, which compromised learning and contributed to teacher stress. Local literature confirms that special needs education is crippled due to low budget and under-staffing (Buergi et al., 2018; Hafeez, 2020; Hussain et al., 2021). Other literature also argues that SETs need to be supported for stress relief through improved social support, work–life balance, and work organization (Antoniou et al., 2009; Bataineh & Alsagheer, 2012; Fimian, 1986; Sharp Donahoo et al., 2018).

Our findings reveal that a source of stress for SETs has to do with unsupportive administration and governance. The administration was described as punitive and adverse to efforts for teaching adaptation by teachers. Administration was also blamed for not

releasing funds for teaching material and hiring cleaning staff; which prevented SETs from achieving teaching objectives. Government inefficiencies with regard to under-allocation of funds and misallocation of specialized staff were also highlighted. Global literature confirms that underfunding and mismanagement are major problems for special education services across the world (Adigun, 2018; Chitiyo & Chitiyo, 2007; Eleweke & Rodda, 2002; Rude & Miller, 2018). We also found that SETs suffered from being assessed by the administration and government based on general education syllabus completion, and not on teaching style modification for skill development and practical knowledge of students. Unfair assessment and supervision, and lack of autonomy in teacher curriculum management and teaching style can lead to multiple problems like teacher demotivation and preventing learning goals from being achieved (Abedi & Faltis, 2015; Al-dyiar & Salem, 2013; Foloştină & Tudorache, 2012; Göktürk et al., 2021).

The findings also revealed that SETs suffered from low self-efficacy and great stress due to worry for the future of SSN. SETs felt helpless in being able to report problems or mobilize improvement to higher authorities for better learning outcomes and life opportunities of their students. Their own financial limitations prevented them from contributing to significant change in the lives of SSN. The coronavirus pandemic brought with it two threats for SETs: (i) not being able to teach SSN remotely and (ii) inability to secure preventive practices in resource short special needs institutes. The unfavorable home environment of SSN was another challenge to teaching efficacy for SETs. SETs mentioned that the financial and literacy disadvantages of parents and families contributed to the confidence and limitations in development of SSN. Furthermore, SSN living in joint families suffered from confidence issues due to neglect and stigma.

Limitations of study

The limitations of this study include the small sample size and inability to sample other provinces. This study also does not include SETs from private institutes. However, our study has several benefits with regard to identifying challenges of SETs and special needs education in Pakistan. It is hoped that the findings from this study will provide impetus for improving policy development for special needs education overall, and specifically for special needs teachers and students. In addition, the mixed-methods design of this study offers advantages in explaining details and specifics related to the quantitative findings. For example, though the quantitative data suggests high frequency of training for SET in the last year, the qualitative data reveals that the training had limitations of being theoretical without application for skill development. Based on this study we are able to conclude with key recommendations relevant for Pakistan, but also other developing nations.

Concluding recommendations

Much has been written about the autonomy and dignity of SSN, but rarely has research highlighted the personal and professional needs of SETs in the developing world. There is a need for immediate attention to support SETs and reform the special needs education sector in Pakistan, South Asia, and other developing regions. Budget allocation must be increased to improve staffing and provision of shadow teachers, and to improve resource allocation for educational adequacy. There is a critical need to develop the special needs

curriculums for different disabilities and differentiated learning, and to shift teaching methods to skill-based and technology supported education. The Special Education Department of Pakistan must also initiate plans for inclusive education to provide opportunities for integration and inclusivity and outreach of provision to rural areas. We recommend third party monitoring and evaluation of special needs institutes and the Special Education Ministry, with regard to budget allocation and disbursement, specialist allocation to relevant seats and disabilities, training of SETs and resource adequacy.

Training for SETs must be expanded to include practical learning and problem solving initiatives. SETs also need training for skill development in behavior management of SSN. There is a need for basic training regarding special needs identification and development of low-cost teaching methods for developing regions. We recommend the hiring of non-teaching staff to secure preventive behaviors for infection control and public health safety. In the long-run, there is a need for heavy investment for technical adaptation and instructional adjustment to accommodate remote learning during times of pandemic. This will be a valuable investment, given that SSN may also opt for remote learning due to individual health problems that may prevent school attendance. Finally, we recommend joint awareness and literacy sessions for parents, joint family members, and SETs to improve the holistic support and quality of care-provision for SSN. This is possible through the utilization of health social workers, school counselors, and school psychologists in the special needs education sector.

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