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Are they Stress-Free? Examining Stress among Primary School Teachers in Tanzania

Patrick Severine Kavenuke*[1], Joel Jonathan Kayombo[2] and Mjege Kinyota[2]

Teachers enter the profession with enthusiasm for the new adventure. Unfortunately, when they start working, they encounter circumstances that give rise to stress. The present study, which used a sample of 550 participants from 50 primary schools selected from the Kisarawe district in the Coastal Region of Tanzania, examines the extent of stress among primary school teachers and the factors influencing stress. Overall, the results indicate that teachers' levels of stress range from low to moderate. Moreover, the results from hierarchical regression analysis indicate that factors such as sex, class size, age, career intentions and teaching subject significantly predict teachers' stress. The study concludes that there is a need for the government, policymakers and school administrators to reduce teachers' workload. Furthermore, school administrators in particular should be supportive and should design mechanisms that could develop a sense of collegiality among teachers in order to improve teacher-to-teacher relationships.

Keywords: administrative support, task overload, teacher stress, teacher-to-teacher relationship, working with students

1 *Corresponding Author. Dar es Salaam University College of Education, University of Dar es Salaam, Tanzania; patrickkavenuke@yahoo.com.
2 Dar es Salaam University College of Education, University of Dar es Salaam, Tanzania.

Ali so učitelji pod stresom? Preučevanje stresa med učitelji na osnovnih šolah v Tanzaniji

Patrick Severine Kavenuke, Joel Jonathan Kayombo in Mjege Kinyota

Učitelji vstopajo v poklic z navdušenjem nad novimi dogodivščinami. Žal se ob nastopu dela srečujejo z okoliščinami, ki povzročajo stres. Ta raziskava je zajela petsto petdeset udeležencev iz petdesetih osnovnih šol, izbranih v okrožju Kisarawe v obalni regiji Tanzanije; preučuje obseg stresa med osnovnošolskimi učitelji in dejavnike, ki nanj vplivajo. Izsledki kažejo, da je stopnja stresa pri učiteljih nizka do zmerna. Rezultati hierarhične regresijske analize še kažejo, da dejavniki, kot so: spol, velikost razreda, starost, poklicne ambicije in predmet poučevanja, statistično pomembno napovedujejo stres učiteljev. Raziskava ugotavlja, da morajo vlada, oblikovalci politik in ravnatelji zmanjšati delovno obremenitev učiteljev. Nadalje bi morali zlasti ravnatelji delovati podporno in oblikovati mehanizme, ki bi lahko razvili občutek kolegialnosti med učitelji, da bi tako izboljšali odnose med njimi.

Ključne besede: administrativna podpora, preobremenjenost z nalogami, stres učiteljev, odnosi med učitelji, delo z učenci

Introduction

Teaching is widely recognised as a demanding and stressful profession (Alhija, 2015; Kavita & Hassan, 2018; Shkëmbi et al., 2015; Yu et al., 2016). The challenges associated with the profession, such as administrative burdens, classroom management difficulties and lack of autonomy, contribute greatly to teachers' stress. Moreover, teachers encounter significant social and political scrutiny coupled with high levels of accountability as they perform their jobs. In our contemporary society, teachers strive for performance while trying to maintain a work-life balance, which leads to an insidious increase in stress. As an issue concerning both policy and practice, teacher stress has been treated as mundane and little attention is therefore devoted to it. In response to this, researchers have become increasingly interested in studying teacher stress over the past four decades (Kyriacou, 2001; Mintz, 2007). From the sociological perspective, teacher stress affects classroom socialisation and is therefore hypothesised to affect the classroom climate and the entire quality of the teacher-students relationship (Rafiq & Shah, 2015). Teachers who experience high levels of stress are more likely to criticise students and lose their temper than those with lower levels of stress. Consequently, when teachers are stressed, students may display a low level of social adjustment (Greenberg et al., 2016). In this regard, it has been suggested that for teachers to successfully connect with their students, so that students in turn connect with the subject matter, teachers need a variety of resources that could free them from all sorts of stress (Chang, 2009).

Teacher stress is "the experience by a teacher of unpleasant, negative emotions, such as anger, anxiety, tension, frustration or depression, resulting from some aspect of their work as a teacher" (Kyriacou, 2001, p. 28). As stated earlier, teaching as a profession is recognised as a stressful undertaking (Alhija, 2015; Yu et al., 2016). Some studies (e.g., von der Embse et al., 2016) have argued that teacher stress is a result of teacher job dissatisfaction and poor student outcomes. Research reveals several sources of teacher stress, including working with unmotivated students, exposure to frequent curricula changes, challenging relationships with colleagues and administrators, poor school working conditions, task overload and weak administrative support (Mintz, 2007; Moracco et al., 1982).

Factors influencing teacher stress

Depending on how teacher stress is measured, research on the factors influencing teacher stress has produced mixed results. The following literature review is undertaken with reference to the dimensions of measuring teacher

stress, namely, administrative support, working with students, teacher-to-teacher relationship and task overload. These dimensions have been augmented across factors such as sex, teaching experience, education level, subject specialisation, class size and age.

Starting with sex, numerous studies (Alson, 2019; Aydin & Kaya, 2016; Lasebikan, 2016; Pang, 2012) have found that there is no significant difference between males and females regarding teacher stress. However, other studies have indicated a significant difference between males and females with regard to teacher stress (Aftab & Khatoon, 2012; Yu et al., 2016). For instance, while Yu et al. (2016) found that female teachers experience more social stress than male teachers, Aftab and Khatoon (2012) reported that male teachers are more stressed than their female counterparts.

With regard to teaching experience, studies (e.g., Pang, 2012; Yu et al., 2016) have indicated that there is no significant relationship between the number of years of teaching experience and teacher stress, while other studies have found a significant relationship between teaching experience and teacher stress (Aydin & Kaya, 2016; Kavita & Hassan, 2018). Moreover, the findings are contradictory in terms of the level of stress and the years of teaching. For instance, while scholars (e.g. Alson, 2019; Aydin & Kaya, 2016) have noted that the stress level in teachers with few years of work experience (below 5 years) was reported as being higher than in teachers who had worked for a period of more than 5 years, Kavita and Hassan (2018) reported that teachers with work experience of over 11 years felt more stressed compared with those with less than 11 years of work experience. Given the continued mixed results, Yu, et al. (2016) highlight the need for further research to investigate the relationship between years of teaching and teacher stress.

Level of education has also been linked with teacher stress. Several studies (e.g., Kavita & Hassan, 2018; Shkëmbi, et al., 2015) have established a relationship between level of education and teacher stress. For instance, a study by Shkëmbi et al. (2015) found that teachers with lower levels of education recorded higher levels of stress. In contrast, Aydin and Kaya (2016) found that stress levels originating from school facilities, the teaching profession, students and school administration did not demonstrate a significant difference in terms of educational status, suggesting that there is no significant relationship between teachers' level of education and their level of stress.

A relationship between teaching subject and teacher stress has also been established. It has been observed that there is a significant difference in mean scores based on subjects taught. For instance, a significantly higher mean score was observed among teachers teaching science subjects compared with those

teaching either arts or commercial subjects (Lasebikan, 2016). Class size has also been reported to have a significant relationship with teacher stress (Aftab & Khatoon, 2012; Luvinga, 2013). Pang (2012) noted that higher teacher stress was observed among teachers who taught large classes. In addition, studies have emphasised that an excessive number of students taught by the teacher increases teacher stress in the dimension of task overload (Luvinga, 2013; McCarthy et al., 2016).

Similarly, age has been associated with teacher stress. In particular, studies have found that teachers under 40 years of age have more stress than older teachers (e.g., Yu et al., 2016). According to Yu et al. (2016), the reasons for young teachers being more stressed than older teachers is that young teachers encounter challenges associated with personal life events, such as buying houses and cars, getting married, raising children and caring for the elderly. In contrast, other studies have concluded that there is no significant relation between age and teacher stress (Alson, 2019; Aydin & Kaya, 2016; Lasebikan, 2016). With regard to many of the reviewed variables, research has produced mixed results. This reminds researchers of the need to continue to conduct studies of this nature in order to investigate the relationship between independent variables and teacher stress.

Teacher stress in the Tanzanian context

Like many other countries, Tanzania has teachers with stress symptoms and several studies have been conducted on the subject (Boniface, 2016; Hecker et al., 2018; Kayumba, 2017; Luvinga, 2013; Mkumbo, 2014). Luvinga (2013) found that teachers in the Kinondoni municipality in Tanzania have some signs of stress, such as temper outbursts, increased aggression, inability to concentrate, excessive use of alcohol and making decisions about death and suicide.

Similarly, Hecker et al. (2018) found that the highest level of stress among teachers was observed in their personal life, work life and student-related life. Inter alia, these researchers found the most prevalent symptom of teacher stress to be a feeling of tiredness. Feelings of stress among teachers were mainly observed in their working environment and in teaching-related activities (Boniface, 2016; Hecker et al., 2018). The literature indicates that the main contributors to teacher stress include the lack of public acknowledgment of teachers and pressurising curriculum demands (Hecker et al., 2018).

Theoretical framework

Studies have focused on teacher burnout as a result of teacher stress (Chang, 2009; Weinstein & Trickett, 2016), resulting in teacher stress being a relatively overlooked area of research in the broader context of education (Chang, 2009; Weinstein & Trickett, 2016). Based on the reviewed literature, we constructed a theoretical framework using four important dimensions of teacher stress: administrative support, working with students, teacher-to-teacher relationship and task overload. Several other researchers (e.g., Greenberg, et al., 2016; Kyriacou, 2001; Lasebikan, 2016; Mintz, 2007; Moracco et al., 1982; Yu et al., 2016) have recognised at least one of these as important dimensions of measuring teacher stress.

Administrative support

School administrators can make teachers feel comfortable in their teaching career, but can also make them feel stressed (Kyriacou, 2001). School administrators tend to focus on work efficiency, which leaves teachers feeling stressed (Yu et al., 2016). Moreover, teachers become stressed when they do not receive support from school administrators.

Working with students

Teaching involves complex student-teacher relationships (Chang, 2009), and teachers may become angry and frustrated as they interact with and care for the students (Addison & Yankyera, 2015; Chang, 2009; Kyriacou, 2001). Thus, teachers tend to be stressed with students particularly in classroom management when dealing with students with different behaviours (Addison & Yankyera, 2015; Chang, 2009; Moracco et al., 1982; Pang, 2012).

Teacher-to-teacher relationship

While the teacher-to-teacher relationship is a source of strength, it can also be a source of teacher stress. Several studies (e.g., Kyriacou, 2001; Moracco et al., 1982) assert that stress is produced as teachers interact with fellow teachers. Similarly, Wengel et al. (2015) have argued that poor relationships with colleagues cause stress in workplaces.

Task overload

Task overload is another dimension that has been used to measure teacher stress (Addison & Yankyera, 2015; Kyriacou, 2001; Moracco et al., 1982; Yu et al., 2016). In schools, teachers encounter responsibilities where they have

to work as class teachers, subject teachers and discipline teachers, as well as taking on other managerial roles. Moreover, teachers are engaged in duties that are more or less ambiguous (Wengel et al., 2015), which also leads to stress.

Statement of research questions and hypotheses

Many countries, including Tanzania, have recently undergone numerous education reforms, such as adopting a learner-centred approach to teaching and learning. This approach requires that teachers and students are in a horizontal relationship to allow them to freely contribute to knowledge production (Freire, 2013). For teachers to implement such education reforms, they have to work without stress. The question that arises is: Are Tanzanian primary school teachers sufficiently free from stress that they can happily implement such reforms in schools? The reviewed literature suggests that teachers in Tanzania seem to be teaching while stressed (Boniface, 2016; Hecker et al., 2018; Luvinga, 2013; Kayumba, 2017). Furthermore, with respect to the reviewed literature, none of the reviews has focused on teacher stress in primary school teachers. It is within this conundrum that the present research emerged to examine teacher stress in primary schools in the Coast Region of Tanzania. This study was guided by two research questions and the subsequent hypotheses.

(i) What is the extent of stress among primary school teachers in the selected area?

H1: High levels of stress will be observed among teachers in all dimensions of teacher stress.

(ii) What factors influence stress among primary school teachers in the selected area?

H2: There will be no significant difference between males and females with regard to their stress.

H3: There will be a significant relationship between years of teaching experience and teacher stress.

H4: There will be a significant relationship between level of education and teacher stress.

H5: There will be a significant relationship between teaching subject and teacher stress.

H6: There will be a significant relationship between class size and teacher stress.

H7: There will be a significant relationship between career plan and teacher stress.

H8: Teachers' age will have a significant effect on their stress.

Method

Research approach and design

The study was quantitative in character and a survey research design was used to generate answers to the research questions and to confirm or refute the hypotheses guiding the study. The design permitted the researchers to examine the opinions of participants (Ary et al., 2010) regarding the extent of stress among primary school teachers and the factors influencing stress among primary school teachers in Tanzania. In the process, the researchers were guided by the guidelines for designing survey research, such as adapting reliable survey items from tested instruments and minimising central tendency errors.

Study participants and sampling

The sample consisted of 550 teachers from 50 primary schools located in the Kisarawe district in the Coast Region of Tanzania. Some 50 primary schools were randomly selected from a total of 78 primary schools in the district. In each school, 11 primary school teachers were randomly selected to participate in the study by filling in the questionnaires. Their mean age was 34.96 years (SD = 7.942). Of the 550 participants, 288 (53.1%) were female and 254 (46.9%) were male (Table 1). The majority of the teachers were teaching language and arts subjects. In terms of their level of education, the participants were Grade A (Certificate) teachers, Diploma teachers, and Bachelor Degree and above teachers. Of the 550 participants, the majority (252 teachers or 46.3%) were Grade A (Certificate) teachers, while the smallest proportion were Diploma teachers (76 teachers or 14.0%) (See Table 1).

In the Tanzanian context, Grade A (Certificate) teachers attend a two-year training programme and the entry qualification is the Certificate of Secondary Education (Ordinary Level) (UNESCO, 2010). Grade A (Certificate) teachers mainly teach in pre-primary and primary schools. Similarly, Diploma teachers are those who acquire qualifications after attending a two-year course (Ministry of Education and Vocational Training [MoEVT], 2007). The difference is that completing high school examinations with a minimum qualification of 'division III' is the entry qualification for one to attend a training programme resulting in a Diploma level of education (UNESCO, 2010). In addition, there are Bachelor Degree teachers, who complete a three-year course in teacher education universities. In Tanzania, the basic educational qualifications for secondary school teachers are Diploma and Bachelor Degree teachers (Chikoyo, et al., 2020; MoEVT, 2009), although teachers with a Postgraduate Diploma in Education, and a Master in Education

degree also qualify to teach students in secondary education (MoEVT, 2009). Nevertheless, given the current government's decision to transfer some secondary school teachers to primary schools, it has recently been common to find teachers with Diploma and above teaching in primary schools. Moreover, given the decision of some Grade A (Certificate) teachers to upgrade their education to a higher level of education through teacher professional development programmes, many primary schools are staffed with teachers holding Diploma and Bachelor Degrees.

Table 1

Demographic characteristics of the sample

Characteristics (N = 550)	N	%
Sex		
Male	254	46.9
Female	288	53.1
Teaching subject		
Language and arts	254	46.9
Social science	104	19.2
Mathematics and science	184	33.9
Years of teaching experience		
Less than 3	32	5.9
3–6	234	43.2
7–10	80	14.8
11 and above	196	36.2
Level of education		
Grade A (Certificate)	252	46.3
Diploma	76	14.0
Bachelor degree and above	216	39.7
Number of students taught		
1–45	158	28.9
46–90	206	37.7
91–135	84	15.4
136 and above	98	17.9
Career plan		
Leave teaching	82	15.1
Continue teaching	462	84.9
Extra responsibilities		
Yes	504	92.0
No	44	8.0
Type of extra responsibility		
Head teacher	26	5.1
Class teacher	292	57.5
Discipline teacher	20	3.9
Academic teacher	66	13.0
Games and sports teacher	26	5.1
Others	78	15.0

Research site

Studies on teacher stress have previously been conducted in Tanzania. Unfortunately, none of the studies reviewed undertook research on schools located in the Coast Region. It is important to note that the district selected in this region is primarily rural and therefore represents the typical working environment for many teachers in the country. We decided to conduct research on teacher stress that is sensitive to the rural context for the purpose of building evidence on the topic. Studies related to teacher stress have been conducted in secondary schools in the Dodoma region (e.g., Boniface, 2016), the Dar es Salaam region (e.g., Luvinga, 2013; Hecker et al., 2018), as well as in the Arusha, Kagera, Kigoma, Iringa and Lindi regions (e.g., Hecker et al., 2018). Teacher stress studies have also been conducted in teacher training colleges, such as Marangu in Kilimanjaro (e.g., Kayumba, 2017). Similarly, teacher stress studies have been conducted in universities in the Dar es Salaam and Dodoma regions (e.g., Mkumbo, 2014). From this review, it is noted that many studies have focused on other levels of education, leaving the primary school area under researched.

Instruments

In the present study, we used standardised questionnaires as the main instrument for collecting data, with a set of items for each dimension of measuring teacher stress.

Administrative support

The dimension of administrative support was measured using a four-point scale (1 = strongly disagree, 4 = strongly agree) for items measuring the extent of stress among primary school teachers. The dimension was measured using six items (e.g., "I feel my head teacher is less concerned about what happens in the classroom"). The items were modified from a study done by Moracco et al., (1982). After running a reliability test, all of the six items were retained. The Cronbach's alpha of the study by Moracco et al. (1982) for this dimension was .91, while the Cronbach's alpha for this dimension in the present study is .83.

Working with students

We measured working with students as a dimension of teacher stress using a four-point scale (1 = strongly disagree, 4 = strongly agree). Nine items (e.g., "I feel stressed in dealing with students who do not want to learn") were

used to measure this dimension. After running a reliability test, all nine items were retained. The items were adopted from Moracco et al. (1982) and customised to fit the local study context. The Cronbach's alpha of the study by Moracco et al. (1982) for this dimension was .86. In the present study, the reliability coefficient is .81.

Teacher-to-teacher relationship

We measured the dimension of teacher-to-teacher relationship using a four-point scale (1 = strongly disagree, 4 = strongly agree). Five items (e.g., "I feel there is competition between teachers in my school rather than a team spirit of cooperation") were used to measure the dimension. Again, after running a reliability test, all five items were retained. The items were adopted and customised from a study by Moracco et al. (1982). The Cronbach's alpha of the study by Moracco et al. (1982) for this dimension was .85, while the reliability coefficient for this dimension in the present study is .85.

Task overload

The dimension of task overload was measured using a four-point scale (1 = strongly disagree, 4 = strongly agree). Seven items (e.g., "I feel I hardly finish my work-related activities") were used to measure this dimension. The items were modified from a study by Moracco, et al. (1982). Similarly, after running a reliability test, all seven items were retained. The reliability coefficient of the study by Moracco et al. (1982) for this dimension was .80, while the reliability coefficient for this dimension in the present study is .81.

Independent variables

With reference to the reviewed literature, we included several independent variables. Hence, independent variables such as sex were included in the study. We also included teaching experience. Participants were asked to indicate the number of years of teaching using a 4-point scale (1 = less than 3 years, 2 = 3–6 years, 3 = 7–10 years, and 4 = 11 years and above). The participants were also asked to indicate their level of education using a 3-point scale (1 = Certificate, 2 = Diploma, and 3 = Bachelor degree and above). The participants were also asked to indicate their teaching subjects using a 3-point scale (1 = Language and arts, 2 = Social science, and 3 = Mathematics and science). In addition, the participants were asked to specify the number of students they were teaching at the time of data collection using a 4-point scale (1 = 1–45 students, 2 = 46–90 students, 3 = 91–135 students, and 4 = 136 and above students). Furthermore, the

participants were asked to specify their age. They were also asked to indicate their career plan by specifying whether or not they want to continue teaching. Despite mentioning the influence of teacher stress in deciding to quit teaching, few studies have established a relationship between the decision to leave or continue teaching and teacher stress. The decision to include many independent variables therefore adds value to the exploratory nature of the present study. The purpose of including all of these independent variables was largely to establish whether or not they relate to the dependent variables.

Data analysis

We used the software package SPSS version 22 to analyse the data collected. In order to be able to respond to the hypotheses defined earlier, several analyses were computed. Firstly, a descriptive statistical analysis was conducted for the purpose of computing the frequencies, percentages, mean and standard deviation. A reliability test was also conducted in order to calculate the Cronbach's alpha for each dimension. The reliability scores reported in this study represent the consistency between the items for each dimension. To respond to the first research objective, we calculated the mean scores and standard deviations for different dimensions. In relation to our scale, mean scores greater than or equal to 3 ($M \geq 3$) (equivalent to "agree" on our scale) were considered as high levels of stress. Mean scores between 2 and 3 ($2 < M < 3$) were considered as moderate levels of stress, while mean scores of 2 and below ($M \leq 2$) were considered as low levels of stress. Secondly, we computed hierarchical regression analysis in order to respond to the second research question and its subsequent hypotheses. Before regression analysis was performed, all of the categorical variables were transformed into dummy variables.

Results

The research questions guiding the study were: (i) What is the extent of stress among primary school teachers in the selected area? (ii) What factors influence stress among primary school teachers in the selected area? In line with these research questions, several hypotheses were developed. The results are presented in accordance with the research questions and the hypotheses.

The extent of stress among primary school teachers in the selected area

In order to respond to the first research question, we calculated the mean scores and standard deviations for all of the dimensions measuring teacher stress. For age, we computed correlation, and we thus carried out the Pearson correlation. Overall, the results indicated that the teachers' levels of stress ranged from low to moderate (Table 2).

Table 2

Mean scores for dimensions measuring teacher stress

Administrative support	Working with students	Teacher-to-teacher relationship	Task overload
M = 1.77, *SD* =.580	*M* = 2.24, *SD* = .647	*M* = 1.73, *SD* = .664	*M* = 2.33, *SD* = .675

In order to understand how teachers scored on the individual items measuring teacher stress, we calculated the mean scores and standard deviation for individual items in each dimension. The results indicate that although teachers were less stressed, they scored relatively higher in many of the individual items measuring the dimension of working with students and in the dimension of task overload than the rest of the dimensions (Table 3).

Table 3

Mean scores of teacher stress dimensions and their respective individual items

	Min	Max	*M*	*SD*
Administrative support	**1**	**4**	**1.77**	**.580**
I feel there is lack of administrative support in my school	1	4	1.78	.773
I feel my head teacher lacks insight into classroom problems	1	4	1.63	.737
I feel my opinions are not valued by my head teacher	1	4	1.70	.742
I feel there is lack of recognition for good teaching in my school	1	4	1.92	.920
I feel I cannot tell my head teacher in an open way how I feel about many school-related matters	1	4	1.88	.867
I feel my head teacher is less concerned about what happens in the classroom	1	4	1.72	.717
Working with students	**1**	**4**	**2.24**	**.647**
I feel stressed in dealing with students who do not want to learn	1	4	2.64	1.622
I feel stressed telling my students the same things every day	1	4	2.43	.985
I feel stressed with undisciplined students who take much of my time	1	4	2.41	.983
I feel I do not have adequate control over my students	1	4	1.50	.728

	Min	Max	*M*	*SD*
I feel there is lack of parental involvement in dealing with students' discipline problems	1	4	2.11	.919
I feel stressed due to students' learning problems	1	4	2.38	.904
I feel stressed due to students' psychological problems	1	4	2.30	.837
I feel stressed due to students' individual differences	1	4	2.35	.920
I feel stressed due to taking responsibility for students every day	1	4	2.05	.915
Teacher-to-teacher relationship	**1**	**4**	**1.73**	**.664**
I work in a school where there is an atmosphere of conflict between teachers	1	4	1.63	.845
I feel there is competition between teachers in my school rather than a team spirit of cooperation	1	4	1.86	.834
I feel there is a poor teacher-to-teacher relationship in my school	1	4	1.65	.754
There is poor communication between teachers in my school	1	4	1.72	.863
I feel some teachers in my school are incompetent	1	4	1.83	.869
Task overload	**1**	**4**	**2.33**	**.675**
Some teachers in my school do not do their job	1	4	2.00	.941
I feel overloaded	1	4	2.40	1.006
I feel overwhelmed by additional responsibilities	1	4	2.28	1.008
I feel I hardly finish my work-related activities	1	4	2.10	.946
I have insufficient opportunity for rest and preparation during the school day	1	4	2.34	.999
I do school work at home to meet what is expected	1	4	2.69	1.002
I feel stressed due to organising learning activities of students with different capabilities	1	4	2.40	.980

Factors influencing stress among primary school teachers in the selected area

Predictors of teacher stress (Administrative support)

In responding to this research question, we computed hierarchical regression analysis, whereby personal characteristics were first added, followed by work-related variables. The results of the first block linear regression analysis (Table 4) revealed that the model was statistically significant ($p < .001$). In addition, the R^2 value of .012 implies that personal variables associated with this regression model explain 1.2 percent variance in the sub-scale of administrative support. Specifically, there was a significant positive effect for the level of education ($B = .094$, $p < .01$), implying that the level of stress increased with an increase in the level of education. Also, there was a negative effect for age ($B = -.108$, $p < .01$) in the dimension of administrative support, implying that young teachers felt more stressed with that dimension. Variables of years of work experience, number of students, career plans, whether or not teachers have additional responsibilities, and teaching subject were added to the second block. The results indicated that the model is significant ($p < .01$). In this case,

number of students (B = .165, p < .05) and having no additional responsibilities (B = -.116, p < .05) had significant effects on teacher stress related to administrative support. In other words, large class sizes and additional responsibilities positively predicted teacher stress in this dimension. However, the effect of age and level of education disappeared in the second block.

Table 4

Hierarchical regression for predictors of teacher stress

Predictor variables	Model 1				Model 2			
	Administrative support	Working with students	Teacher-to-teacher relationship	Task overload	Administrative support	Working with students	Teacher-to-teacher relationship	Task overload
Personal characteristics								
Sex (1 = Male; 0 = Other)	.605	.169	.005* *(.123)*	.000* *(.243)*	.426	.272	.043* *(.092)*	.000* *(.214)*
Age	.019* *(-.108)*	.485	.000* *(-.203)*	.000* *(-.216)*	.290	.666	.000* *(-.272)*	.001* *(-.243)*
Education level (1 = Certificate, 3 = Bachelor degree and above)	.041* *(.094)*	.765	.000* *(.255)*	.222	.078	.690	000* *(.221)*	.092
Work-related characteristics								
Years of work experience					.561	.297	.052	.400
Number of students (class size)					.000* *(.165)*	.713	.072	.017* *(.111)*
Career plan (1 = Work as a teacher, 0 = Other)					.087	.207	.000* (.248)	.035* *(.096)*
Other responsibility (1 = No other responsibility, 0 = Other)					.011* *(-.116)*	.371	.788	.692
Language and arts (1 = Language and Arts, 0 = Other)					.519	.768	.077	.204
Social sciences (1 = Social sciences, 0 = Other)					.622	.489	.017* *(-.201)*	.412
R^2	.012	.001	.097	.110	.049	.004	.163	.120
ΔR^2	.012	.001	.097	.110	.037	.003	.066	.010
ΔF	.035*	.453	.000*	.000*	.000*	.576	.000*	.078

Predictors of teacher stress (Working with students)

The results of the first and second block linear regression analysis indicate no statistical significant effects (p > .001). This implies that all of the independent variables included in the models did not predict teacher stress in the aspect of working with students.

Predictors of teacher stress (Teacher-to-teacher relationship)

The results of the first block linear regression analysis (Table 4) indicate that the model is significant ($p < .001$), with the R^2 value of .097 implying that personal variables associated with this regression model explained 9.7 percent variance in the aspect of teacher-to-teacher relationship. In this case, there was a significant positive effect for level of education ($B = .255$, $p < .01$) and being male ($B = .123$, $p < .01$), and a negative effect for age ($B = -.203$, $p < .01$). When the variables of years of work experience, number of students, career plans, whether or not teachers have additional responsibilities, and teaching subject were added to the second block, the model was significant ($p < .01$). In this case, being male ($B = .092$, $p < .05$), age ($B = -.272$, $p < .05$), level of education ($B = .221$, $p < .05$), intentions to work as a teacher ($B = .248$, $p < .05$) and majoring in social sciences ($B = -.201$, $p < .05$) were significant predictors of teacher stress in the aspect of teacher-to-teacher working relationships. Generally, the second model was stronger, with the entered variables explaining 16.3 percent variance in stress associated with teacher-to-teacher relationships.

Predictors of teacher stress (Task overload)

The results of the first block linear regression analysis (Table 4) revealed that the model was statistically significant ($p < .001$). Moreover, the R^2 value of .110 implied that personal variables associated with this regression model explained 11 percent variance in teacher stress related to task overload. Specifically, there was a significant positive effect for being male ($B = .243$, $p < .01$), implying that males felt more stressed than females in this dimension. Also, there was a negative effect for age ($B = -.216$, $p < .01$), which implies that young teachers felt more stressed with the dimension of task overload. As shown in Table 4, the second block linear regression model was not significant in this case.

Discussion

The descriptive statistics indicate that the majority of the participants were Grade A certificate teachers. Many teachers taught an excessive number of students, more than the recommended number. For instance, it was revealed that 388 teachers (71%) had more than 45 students, which is the recommended number of students per teacher. The findings even indicated that class size is a positive predictor of teacher stress in the aspects of administrative support and task overload. Therefore, if the trend of large class size is not reversed, teacher stress and teacher burnout may continue, thus affecting teachers' overall well-being and performance. Furthermore, the results indicated that many (92%) of

the surveyed teachers had extra responsibilities, including being head teachers, class teachers, discipline teachers, academic teachers and other related responsibilities.

Overall, the results indicated that the teachers' levels of stress ranged from low to moderate. The teachers nonetheless scored relatively higher mean scores in individual items measuring the aspects of working with students and task overload. This indicates that working with students and task overload contribute more to teacher stress than other aspects. Regarding task overload, the findings are similar to previous studies (Addison & Yankyera, 2015; Kyriacou, 2001; Moracco et al., 1982; Yu et al., 2016) that have shown that task overload leads to increased stress among teachers.

In addition, we found that sex was significantly related to teacher stress in aspects such as teacher-to-teacher relationship and task overload. These results replicate earlier studies (e.g., Aftab & Khatoon, 2012; Yu et al., 2016) that have found a significant difference between males and females with regard to teacher stress. In the present study, male teachers had higher mean scores in the aspects of teacher-to-teacher relationship and task overload, meaning that they reported being stressed more in these aspects. These results are similar to other studies (e.g., Aftab & Khatoon, 2012) showing that male teachers are more stressed than female teachers. Yu et al. (2016) also found a significant relationship between sex and teacher stress, although their results showed that female teachers had more social stress than male teachers. The results contradict certain other studies (e.g., Alson, 2019; Aydin & Kaya, 2016; Lasebikan, 2016; Pang, 2012) that have found that there is no significant difference between males and females regarding teacher stress.

The number of years of teaching experience was not significantly related to teacher stress. However, teachers generally scored relatively higher in the aspect of task overload. These results support some earlier studies (e.g., Pang, 2012; Yu et al., 2016) that have reported that there is no significant relationship between years of teaching and teacher stress, but contradict certain other the studies (e.g., Aydin & Kaya, 2016; Kavita & Hassan, 2018) that have found a significant relationship between years of teaching experience and teacher stress. Thus, there are competing explanations in this regard.

Regarding teachers' level of education, the teachers with higher levels of education were more stressed in the aspect of teacher-to-teacher relationship and administrative support. The results are contrary to a study by Shkëmbi, et al. (2015) that found that teachers with lower levels of education recorded higher level of stress. One possible explanation could be that teachers with a higher level of education, such as university degrees, find it more difficult to

successfully mingle with fellow Grade A certificate or diploma teachers. They may also have higher expectations, and thus find a less well paid job such as teaching unenjoyable.

With regard to teaching subject, the results indicated that being a social science major negatively predicted teacher stress in the aspect of teacher-to-teacher relationship only. This replicates earlier findings that showed a significantly higher mean score among teachers teaching science subjects compared with those teaching arts (Lasebikan, 2016). One possible explanation for this observation may be that science teachers spend much of their time with students doing scientific experiments. In the context of Tanzania, shortages of science and mathematics teachers normally lead to higher workloads among science and mathematics teachers, a condition that is expected to lead to teacher stress.

Class size also relates to teacher stress. In the present study, regression results indicated that class size positively predicted teacher stress in the aspects of administrative support and task overload. These results are similar to previous studies (Aftab & Khatoon, 2012; Luvinga, 2013; Pang, 2012) that have reported a significant relationship between class size and teacher stress. Similar to the present study, other studies have emphasised that large class size increases teacher stress in the aspect of task overload (McCarthy et al., 2016; Luvinga, 2013). In fact, when teachers deal with many students, they use much of their time dealing with the students' paperwork.

We also found that teachers' age had a negative significant relationship with administrative support, teacher-to-teacher relationship and task overload. This means that young teachers are more prone to these aspects of teacher stress. Similarly, studies (e.g., Yu et al., 2016) have reported that teachers under 40 years of age have more stress than older teachers. In contrast, other studies (e.g., Alson, 2019; Aydin & Kaya, 2016; Lasebikan, 2016) have observed that age has no significant relationship with teacher stress.

Finally, in the present study, the decision as to whether to leave or stay in the teaching profession was associated with teacher stress. The teachers who intended to leave teaching had relatively higher mean scores than those who intended to continue teaching in administrative support, teacher-to-teacher relationship and task overload. Given the fact that teaching is regarded as one of the most stressful professions (Kavita & Hassan, 2018; Shkëmbi et al., 2015; Yu et al., 2016), it is possible that it leaves many teachers under stress when deciding to quit or continue teaching.

Conclusion and recommendations

The purpose of the present research was to examine the extent of stress among primary school teachers, as well as examining the factors that influence stress among teachers in the Coastal Region of Tanzania. We hypothesised the observation of high levels of stress among teachers in all dimensions of teacher stress. However, we found that the teachers' stress ranged from low to moderate, and that the teachers scored relatively higher mean scores in individual items measuring the dimensions of working with students and task overload. Regarding the factors influencing stress among primary school teachers, the study produced mixed results, which suggests the need to conduct further research in order to investigate such results. From the findings and the discussion, the study concludes that there is a need for the government, policymakers and school administrators to reduce teachers' workload. Furthermore, school administrators should be supportive and should design mechanisms that could develop a sense of collegiality among teachers for the purpose of improving teacher-to-teacher relationships. Finally, based on the findings of this study, the following recommendations are offered: first, the claim that teachers with a higher level of education find it more difficult to successfully mingle with fellows Grade A certificate and diploma teachers should be tested in further research; second, given that this study was quantitative in nature, a qualitative inquiry is needed to explore teachers' conceptions of stress; third, a study that will validate instruments for measuring teacher stress in the context of Tanzania is of paramount importance.

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Biographical note

Patrick Severine Kavenuke, PhD, is a lecturer in Educational Foundations, Management and Lifelong Learning department at Dar es Salaam University College of Education, University of Dar es Salaam. His main areas of research are: teacher education, critical pedagogy, critical thinking skills in students, international and comparative education, and teacher professional development.

Joel Jonathan Kayombo, PhD, is a lecturer in Educational Foundations, Management and Lifelong Learning department at Dar es Salaam University College of Education, University of Dar es Salaam. His research interests include teacher education, sociology of higher education, and educational leadership and policy studies.

Mjege Kinyota, PhD, is a lecturer in Educational Psychology and Curriculum Studies department at Dar es Salaam University College of Education, University of Dar es Salaam. His research interests include teacher education, STEM education, gender in STEM, environmental education, international and comparative education, and social justice education.