



Causal modelling of the influence of demographic variables on work-stimulated stress among early childhood educators in South Africa

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ABSTRACT

Work-related stress has emerged as a pervasive global issue that needs to be investigated by specialists around the world. Work stress is a condition of pressure brought on by one's line of work and occurs when demands of the job are too great for an employee's abilities or resources. The study was undertaken to examine the direct and indirect causal effect of some demographic variables on work-stimulated stress among early childhood educators in South Africa. Hence, the researchers developed and validated a model involving causal linkages between early childhood educators' demographic variables such as age, gender, race, marital status, income and educational qualification, and work-stimulated stress. The study adopted an ex-post-facto research design. The sample comprised one hundred and twenty (120) early childhood educators across twenty (20) Early Childhood Education (ECE) centres. A stratified random sampling technique was used to select the early childhood educators for the study. One validated instrument on work-stimulated stress developed by the researchers on a four-point rating scale was used to collect the data for the study, while path analysis and multiple regression analysis were employed for data analysis. The findings of this study documented the more parsimonious model, which is effective in predicting the influence of demographic variables on work-stimulated stress among early childhood educators. The results further indicated that three (Age, Gender, and Marital Status) out of the six predictor variables caused early childhood educators' work-stimulated stress more than the other variables. The implications of these findings for education policymakers, administrators, and teachers are discussed.

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Introduction

Work-related stress has appeared as a widespread global problem that requires investigation by experts throughout the world. Work stress is defined as a state of pressure brought on by one's profession, and it happens when the demands of the job are insufficient for the workers' skills or resources. According to Badu et al (2020), stressful conditions at work result in work-related stress. Work and stress go hand in hand since an excessive amount of work cause people to become stressed out and as a result, both the employers' and the employees' health suffer. Stress can often be a powerful and motivating tool for individuals to better their performance in an institution, however, researchers (Elliott, 2013 & Kelly and Barrett, 2012) have shown that several negative implications of stress may affect the individual's productivity. These negative implications include; negative emotions, low motivation to work, and lack of concentration on the job, among others. These negative implications have both physical and psychological effects on the employees (the preschool teachers).

Work stress has been defined in different ways over the years. Originally, it was conceived of as pressure from the environment, then as strain within the person (Augustrianto, Silvianita, & Ferari, 2019). The generally accepted definition today is one of interaction between the situation and the individual. Warraich, et al (2014) stated that it is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation. Stress is also defined as an

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environmental stimulus that affects individuals and can provoke physical and psychological reactions (Cahill et al, 2021). It occurs because of objective demand and subjective reaction imbalance in certain professional conditions (Sauter, et al, 2009, Nixon, et al, 2011 and Salavecz, et al, 2010). Thus, work stress is more likely in some situations than others. Stress can undermine the achievement of goals, both for individuals and for organisations.

In the educational sector, it is a commonly held belief that teaching can be a highly stressful profession. Jarvis (2019) discovered that more than 80% of teachers surveyed from a variety of schools said their jobs were very or extremely stressful. According to the National Union of Teachers (NUT), stress is one of the most pressing issues confronting teachers today, and it is the primary health and safety concern in four out of five schools evaluated (NUT, 2017). This means that teachers, in comparison to other occupations such as doctors, lawyers, engineers etc, experience more stress at work. Teacher stress is characterized as unpleasant, negative feelings such as anger, irritation, worry, despair, and nervousness experienced by teachers as a result of some part of their work as teachers (Kyriacou, 2001). Teacher stress has become a key research topic in many nations as the amount of research on the subject has continuously expanded.

According to Nwimo (2005), factors that may induce work stress among teachers and especially early childhood educators include; irregular payment of monthly salaries, lack of adequate resources to carry out their job, difficulties dealing with children of 1-6 years, making decisions that affect their job without involving them by the school management, the demand of official work on their private time, having challenges dealing with pupils' disciplinary problem and difficulty identifying the teaching method suitable for children aged 1-6 years among others.

Other factors that may contribute to work-related stress according to Kelly and Barrett (2012) include job uncertainty, lesser opportunities for career growth, work dissatisfaction, time pressure, office culture, bad management, and lack of support and control. However, Tsutsumi et al., (2009) stated that demographic factors such as age, gender, race marital status, income, and educational qualification among others can also induce work-related stress among teachers.

Several studies (Choy & Wong, 2017; Johnstone, et al, 2016; and Inoue, et al., 2016) have been carried out on the influence of other related variables on work-related stress, but literature on causal modelling of the influence of demographic variables on work-related stress especially among preschool teachers remain scarce. Other researchers have concentrated on the direct influence of demographic variables on work-related stress, but if the direct and indirect effects and the causal linkages among the demographic variables on work-related stress especially among preschool educators are well known, it may help to reduce the stress experienced by preschool teachers especially those from demographic factors. Because of this gap in the literature, this study, therefore, sought causal modelling of the influence of demographic variables on work-related stress among early childhood educators.

The following research questions are posed to guide the study:

- i. What are the estimates of the strengths of the causal paths of the variables in the model?
- ii. What is the causal model involving demographic variables and work-stimulated stress?
- iii. What demographic variable has the most significant influence on teachers' work-related stress?

In the light of the above gaps in literature, the researchers sought to explore the causal modelling of the influence of demographic variables on work-stimulated stress among early childhood educators in South Africa.

Literature Review

Theoretical background of the study

Regularity Theory of Causation by David Hume (1751)

In the year 1751, David Hume advanced this theory. The regularity theory views causation in terms of observable phenomena. In his definition of causation from 1751, Hume used repeated conjunctions of events. Hume contended that only empirical regularities involving classes of events could provide a sufficient definition of causality. The fundamental premise of this theory is that cause-and-effect relationships between variables can only be comprehended by recalling how they have always been linked together in the past. Here, one is referred to as the cause and the other as the effect. This approach allowed for the definition of causation to be solely based on empirical standards as opposed to unobservable presumptions. In other words, Hume's conception of causation and his method of drawing conclusions were identical. The regularity theory of causation is pertinent to this study in that it developed a causal relationship between the sources of work-stimulated stress - teacher demographic variables and stress. In line with the regularity models of causation, demographic variables are the causes while work-stimulated stress is the effect.

Review of Related Empirical Studies

Rozana, et al (2021) carried out a study on the relationship between teacher burnout, occupational stress, coping, gender and age. The main goal of this research was to explore the relationships between burnout, occupational stress, and coping strategies. This survey involved 721 primary education teachers (187 men and 534 women) who teach in public schools in different areas of Albania. To measure the levels of occupational stress, and professional burnout as well as investigate how teachers cope with stress several known scales that have been translated into Albanian and adapted to this research were used. Results indicated that female teachers

experience a lack of support from the administrators more than men. Men experienced depersonalization more than women. Older teachers reported a higher level of exhaustion and occupational stress than other groups, but they indicated higher personal accomplishment. It was also found that the difference between the stress experienced by male and female teachers was statistically significant which implies that gender was a significant factor in predicting work-stimulated stress among teachers.

Rabee (2015) carried out a study to identify work-related stress and its subsequent problems among teachers of the public schools which operated the school-based Violence Reduction Program (VRP) in the governorate of Tulkarm during the second semester of 2015-2016. The study aimed to identify the effect of specific variables, such as gender, specialization, qualifications, and years of service, on the assessment process of stress at work and its subsequent problems. The study tool was a purposefully designed questionnaire, which consisted of 50 items. The validity and internal consistency of this measurement instrument were assessed, where the reliability coefficient score was 0.91. The sample consisted of 130 teachers from public schools in Tulkarm area, which represented almost 100% of the study population. The results showed that variables of gender, specialization, qualification and work experience were not significant predictors of work-related stress among teachers.

In the majority of studies, it was discovered that work-related stress had significant correlations with educators' gender, educational background, and age (Li et al, 2016). Age, gender, and marital status all had a substantial impact on the stress brought on by work (van Dick, & Wagner, 2001). The level of stress preschool instructors experience at work is significantly influenced by their age and educational background (Mack, 2019). After adjusting for other factors such as age, marital status, and other job responsibilities, it was shown that gender was significantly associated with work-related stress in teachers (Ouellette, et al, 2018). Similar research revealed that women face more workplace stress than their male colleagues (Kantas, 2001).

Gender and stress at work among teachers have been linked by research. According to a study by Mondal et al. (2011), men and female teachers experience psychological and physical stress in significantly different ways. Female teachers reported concerns about the essential aspects of their employment, whereas male instructors showed concerns about money. Males were found to experience more stress and anxiety than females. More female teachers than male teachers typically voice burnout complaints. In a previous study, Samad et al. (2010) found that female instructors had worse mental health than male teachers, making them more vulnerable to stress.

The amount of stress teachers experience at work is correlated with their age. In their study on job satisfaction and occupational stress, Darmordy and Smyth (2010) discovered that teachers in their forties experienced higher levels of stress than those in younger age groups. But according to a study by Holeyannavar and Itagi (2012), older teachers were less stressed than their younger counterparts. According to Aftab and Khatoon (2012), older teachers are more seasoned, environment-adaptable, and stress-ready, which is the justification presented for this claim. In light of these diverse situations, it would be interesting to determine the situation of ECD teachers with regard to the association between age and work stress.

Teacher occupational stress and qualifications are associated. For instance, compared to undergraduate and graduate instructors, postgraduate teachers showed "much lower job satisfaction on job role item" (Aftab and Khatoon 2012: 161). Aftab and Khatoon (2012) cited a study by Kyriacou and Sutcliffe from 1978 that showed decreased stress among instructors with higher academic degrees, such as a bachelor's or higher, compared to teachers with lower degrees, such as a diploma. Studies revealed that experience in teaching was linked to teacher occupational stress in addition to qualifications (Aftab and Khatoon 2012). According to the research mentioned above, teachers' early years in their careers are thought to be stressful.

But according to Aftab and Khatoon's study (2012:169), "occupational stress is most prevalent among teachers with an experience of 6-10 years and least prevalent among teachers with 0-5 years of teaching experience." The high rate of stress among children aged 6 to 10 was explained by the fact that as teachers get older, the demands of their roles as teachers become less onerous because they may be better able to analyze them and, as a result of experience, become more adaptable to their working environments and better able to handle stress. The explanation suggested why the 0-5-year-olds showed the least stress was that the teachers may have been happy with their newly discovered careers.

There is a connection between teacher stress and marital status, according to studies. For individuals who had been widowed, divorced, or separated, stress levels were high. In a joint study by Gold and Roth (1993) and Aftab and Khatoon (2012), it was discovered that single instructors experienced more stress than married teachers. In contrast, Parveen (2009) shows that married working women experienced more workplace stress than single working women. Due to societal demands, more tasks and obligations were placed on them as mothers, wives, and homemakers, as well as traditional role classification tendencies.

The aforementioned reviews demonstrate that not enough research has been done globally on the impact of demographic factors on work-related stress in teachers, and their conclusions sometimes don't seem to fall in line. The majority of studies, it was discovered, had been conducted outside of Africa, necessitating the need for this investigation to close any gaps in the body of knowledge. The analysis also revealed a dearth of research on the impact of demographic factors on the work-related stress experienced by early childhood educators. The researchers aimed to use causal modeling to give empirical data on the impact of demographic factors on the work-related stress experienced by early childhood educators in the African environment.

Hypotheses

It is assumed that age, gender, race, marital status, income, and educational qualification can cause work-related stress as experienced by preschool educators. Based on this assumption, the following null hypotheses are formulated to guide the study.

H₀₁: The age of preschool educators will not significantly influence their work-stimulated stress.

H₀₂: The gender of preschool educators will not significantly influence their work-stimulated stress.

H₀₃: The race of preschool educators will not significantly influence their work-stimulated stress.

H₀₄: Marital Status of preschool educators will not significantly influence their work-stimulated stress.

H₀₅: The income of preschool educators will not significantly influence their work-stimulated stress.

H₀₆: The educational Qualification of preschool educators will not significantly influence their work-stimulated stress.

Conceptual Model

The diagram in figure 1 shows the direct linkage between teachers' demographic variables and work-stimulated stress. From the model, the researchers intended to estimate the direct influence of age, gender, race, marital status, income, and educational qualification on early childhood educators' work-stimulated stress. The model will also show the demographic variable that has the most influence on work stress among early childhood educators. The estimates of the strengths of the causal paths of the variables in the model and the most meaningful causal model involving demographic variables and work-stimulated stress will also be estimated.

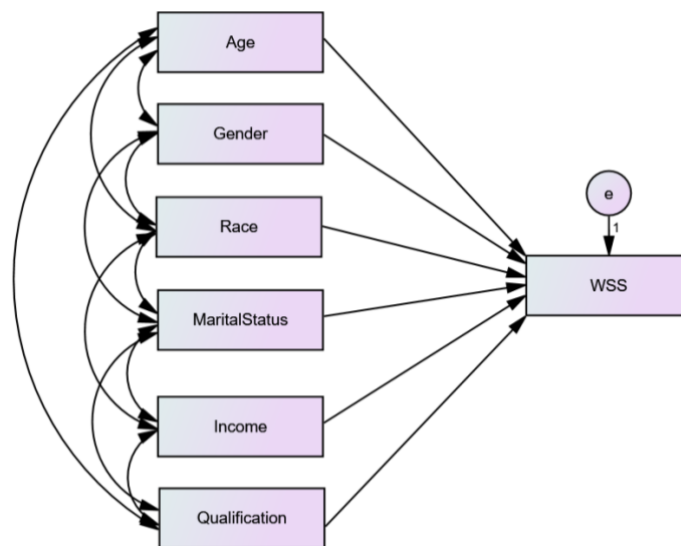


Figure 1: Hypothesized input model

Research & Methodology

Design of the Study

An ex-post-facto research design was used in the study. Ex-post-facto design is the kind of design that resembles experimental study in that it likewise tries to identify cause-and-effect relationships, but differs from it in that the researcher typically has no control over the variables of interest and cannot thus influence them. The only links that the researchers make are to some variables that are already known to be causal factors. The individuals have already been allocated to or categorized into different degrees of the factors whose effects are being studied when the study first begins. Because the researchers did not alter the independent variables, this approach is appropriate. Instead, it was found that the demographic characteristics of teachers affected the dependent variable (work-stimulated stress).

Study Participants

All preschool teachers working with children aged 0 to 6 in the East London Education District of South Africa were the study's targeted population. The study used a sample of 120 preschool teachers. To choose the 120 preschool teachers who will take part in the study, a stratified random sampling procedure was adopted. The strata were developed based on shared attributes or traits among members due to stratified random sampling. Then, a random sample is drawn from each stratum in a proportional number to the size

of the stratum relative to the population. The population is heterogeneous and can thus be separated into smaller groups, so the researchers utilized a stratified sampling technique.

Measures

Data on teachers' work-stimulated stress were gathered using the Early Childhood Educators' Work-stimulated Stress Questionnaire (ECEWSQ). The 20-item ECEWSQ included four rating categories: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD), each with a numerical value of 4, 3, 2, and 1, respectively. Age, gender, race, marital status, income, and early childhood educators' educational backgrounds are among the demographic factors on the questionnaire. Experts evaluated the instrument to make sure it measures the things it was intended to measure. Using Cronbach Alpha, an internal consistency reliability index of the items was calculated to be 0.948.

Data Collection Procedure

Before the commencement of the survey by the researchers, written permission to carry out the survey was gotten from each of the sampled school authorities. Informed written consent to participate in the survey was also obtained from early childhood educators and proprietors. All the early childhood educators who participated in the study were given a copy of the questionnaire on work-stimulated stress to fill out. Direct administration and retrieval methods were employed by the researchers in order to ensure a 100 percent return rate. All the administered questionnaires were duly filled by the participants and returned to the researchers on the spot.

Method of data analysis

The data were analysed using a statistical technique that included frequency and percentage, hierarchical multiple regression analysis, and structural equation modelling. Frequency and percentage were used to analyse the data that pertain to the demographic profiles of the participants. Similarly, while hierarchical multiple regression analysis was used to investigate the influence of teachers' demographic profiles on work-stimulated stress, a structural equation modelling statistical approach was used to develop the causal model for explaining the influence of teachers' demographic variables on work-stimulated stress. The analysis was conducted using SPSS version 24.0 and IBM-AMOS version 26.0. It is pertinent to note that early childhood educators' demographic variables used in the study were regarded as the exogenous variables in the causal model, while work-stimulated stress was the only endogenous variable for this study. The exogenous variables were coded as categorical or classificatory scales while the work-stimulated stress data were coded as ordinal scales. These data were later transformed into interval data to meet the assumptions of structural equation modelling.

Findings

Research Questions 1: What are the estimates of the strengths of the causal paths of the variables in the model?

Table 1: Standardized beta coefficients of the estimates of the strengths of the causal paths of the variables in the model

			β	S.E.	C.R.
WSS	<---	Age	.291	.056	5.184
WSS	<---	Gender	.333	.046	7.305
WSS	<---	Race	.104	.119	.877
WSS	<---	Marital Status	.238	.049	4.881
WSS	<---	Income	-.010	.057	-.179
WSS	<---	Qualification	-.022	.068	-.322

The result in Table 1 shows the standardized beta coefficients of the estimates of the strengths of the causal paths of the variables in the model. The parameter β (the regression coefficient) represents the amount by which a change in the demographic variables must be multiplied to give the corresponding average change in work stimulated stress. The result shows that age of early childhood educators and work-stimulated stress had a coefficient of $\beta (120) = 0.291$. This implies that as the age of respondents increase by one standard unit, the stress level of respondents will increase by 0.291. The result also shows that early childhood educators' gender had a positive and significant association with work-stimulated stress, $\beta (120) = 0.333$. Early childhood educators' race had a positive relationship with work-stimulated stress, $\beta (120) = 0.104$, The result further shows that early childhood educators' marital status had a positive relationship with work-stimulated stress, $\beta (120) = 0.238$. Early childhood educators' income also had a negative relationship with work-stimulated stress, $\beta (120) = -0.010$. Early childhood educators' qualification had a negative relationship with work-stimulated stress, $\beta (120) = -0.022$, These results indicated that early childhood educators' educators' age, marital status, and gender are significant determinants of work-stimulated stress.

Research Questions 2: What is the causal model involving demographic variables and work-stimulated stress?

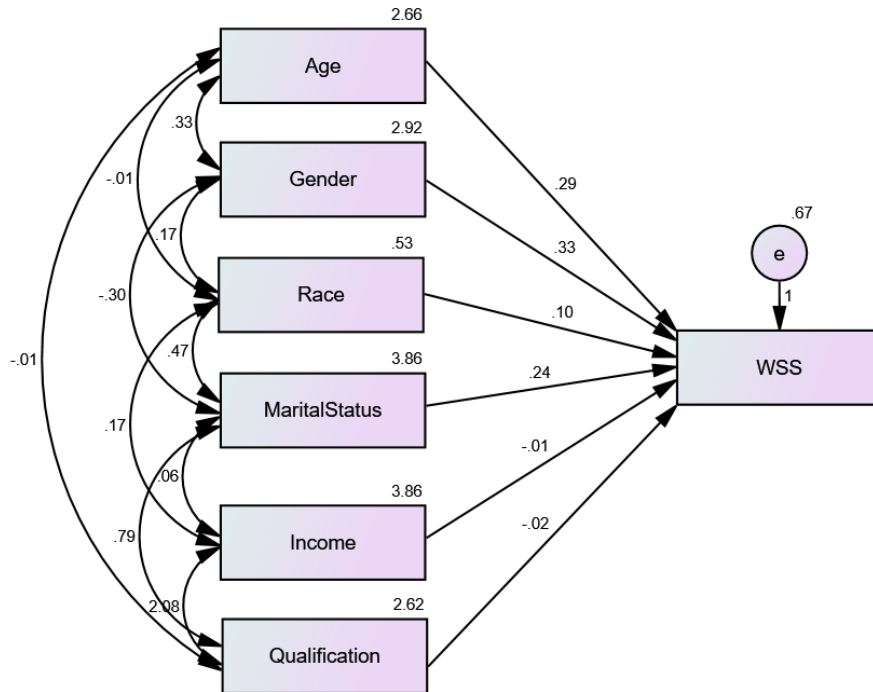


Figure 2: A causal model showing the path coefficients of the influence of demographic variables on early childhood work-stimulated stress.

The coefficients in the output model as shown in figure 2 suggested strong causal effects among the predictor variables (especially early childhood educators’ age, gender and marital status) and with the criterion variable. The directions of the pathways in the model are positive for age, gender, marital status, and race but negative for income and educational qualification. The association between income and qualification of early childhood educators and work-stimulated stress is inverse as shown in the causal model.

Research Question 3: What demographic variable has the most significant effect on teachers’ work-related stress?

Table 2: Standardized coefficient of the demographic variable with the most significant influence on teachers’ work-stimulated stress.

			β	Rank
WSS	<---	Gender	.333	1 st
WSS	<---	Age	.291	2 nd
WSS	<---	Marital Status	.238	3 rd
WSS	<---	Race	.104	4 th
WSS	<---	Income	-.010	5 th
WSS	<---	Qualification	-.022	6 th

The result in table 2 shows that early childhood educators’ gender ($\beta = 0.333$) has the most significant influence on teachers’ work-related stress, followed by age of the respondents ($\beta = 0.291$), marital status ($\beta = 0.238$), race ($\beta = 0.104$), income ($\beta = -0.010$) and lastly educational qualification ($\beta = -0.022$). This result shows that gender is the most significant demographic variable that can induce work-stimulated stress among early childhood educators in South Africa.

Table 3: Hierarchical multiple regression analysis of the influence of demographic variables on work-stimulated stress

Model	R	R ²		Sum of Squares	df	Mean Square	F	Sig.
1	.559 ^a	.312	Regression	62.993	1	62.993	53.589	.000 ^b
			Residual	138.707	118	1.175		
			Total	201.700	119			
2	.693 ^b	.480	Regression	96.791	2	48.396	53.973	.000 ^c
			Residual	104.909	117	.897		
			Total	201.700	119			
3	.712 ^c	.507	Regression	102.280	3	34.093	39.779	.000 ^d
			Residual	99.420	116	.857		
			Total	201.700	119			
4	.776 ^d	.601	Regression	121.311	4	30.328	43.385	.000 ^e
			Residual	80.389	115	.699		
			Total	201.700	119			
5	.776 ^e	.602	Regression	121.492	5	24.298	34.535	.000 ^f
			Residual	80.208	114	.704		
			Total	201.700	119			
6	.776 ^f	.603	Regression	121.562	6	20.260	28.568	.000 ^g
			Residual	80.138	113	.709		
			Total	201.700	119			

a. Dependent Variable: WSS; b. Predictors: (Constant), Age; c. Predictors: (Constant), Age, Gender; d. Predictors: (Constant), Age, Gender, Race; e. Predictors: (Constant), Age, Gender, Race, Marital Status; f. Predictors: (Constant), Age, Gender, Race, Marital Status, Income; g. Predictors: (Constant), Age, Gender, Race, Marital Status, Income, Qualification

A six-model hierarchical multiple regression analysis of the influence of demographic variables on early childhood educators’ work-stimulated stress is shown in Table 3. The first model featured a significant association between the age of early childhood educators and work-stimulated stress, $R(120) = 0.559$, $R^2 = 0.312$, $F(1, 118) = 53.589$. The second model showed an association between age and gender on preschoolers’ work-stimulated stress, $R(120) = 0.693$, $R^2 = 0.480$, $F(2, 117) = 53.973$, $p = 0.000$. In the third model, it is age, gender, and race on early childhood educators’ work-stimulated stress, $R(120) = 0.712$, $R^2 = 0.507$, $F(3, 116) = 39.779$, $p = 0.000$. In the fourth model, age, gender, race, and marital status were significantly correlated with work-stimulated stress $R(120) = 0.776$, $R^2 = 0.601$, $F(4, 115) = 43.385$, $p = 0.000$. In the fifth model, it is the association between age, gender, race, marital status, income and work-stimulated stress $R(120) = 0.776$, $R^2 = 0.602$, $F(5, 114) = 34.535$, $p = 0.000$. The sixth model showed a significant relationship between age, gender, race, marital status, income, qualification, and work-stimulated stress $R(120) = 0.776$, $R^2 = 0.603$, $F(6, 113) = 28.568$, $p = 0.000$. It is observed from the result that the higher the number of demographic variables, the higher the predictive power (R^2) of the variables on work-stimulated stress.

Test of Hypotheses

H01-6: The age, gender, race, marital status, income and qualification of preschool educators will not significantly influence their work-stimulated stress

Table 4: p-values showing the significant influence of demographic variables on work stimulated stress among preschool educators.

			β	S.E.	C.R.	P	Decision
WSS	<---	Age	.291	.056	5.184	0.00	S
WSS	<---	Gender	.333	.046	7.305	0.00	S
WSS	<---	Race	.104	.119	.877	0.38	NS
WSS	<---	Marital Status	.238	.049	4.881	0.00	S
WSS	<---	Income	-.010	.057	-.179	0.85	NS
WSS	<---	Qualification	-.022	.068	-.322	0.74	NS

The result in Table 4 shows a significant relationship between the age of early childhood educators and work-stimulated stress, ($p = 0.00$), this implies that hypothesis one is rejected. Inference drawn is that the age of respondents has a significant influence on their work-stimulated stress. The result also shows that early childhood educators’ gender had a significant association with work-stimulated stress, ($p = 0.00$) implying that hypothesis two is also rejected. Early childhood educators’ race had no statistically significant relationship with work-stimulated stress, ($p = 0.38$). The implication is that, statistically, the race of respondents does not influence work-stimulated significantly therefore hypothesis three is not rejected. The result further shows that early childhood

educators' marital status had a significant relationship with work-stimulated stress, ($p = 0.00$) implying that hypothesis four is rejected and the inference drawn is that the marital status of respondents is a significant factor that can influence work-stimulated stress. Early childhood educators' income had no significant relationship with work-stimulated stress, ($p = 0.85$). This means that hypothesis five is not rejected. Early childhood educators' qualification had no significant relationship with work-stimulated stress, ($p = 0.74$). Since the p-value is greater than 0.05, hypothesis six is not rejected. These data indicate that early childhood educators' age, marital status, and gender are significant determinants of work-stimulated stress.

Discussion

This study was carried out to determine the influence of demographic variables on work-stimulated stress among early childhood educators in South Africa using causal modelling. The result of the study revealed that early childhood educators' age, gender and marital status had statistically significant influences on work-stimulated stress, while early childhood educators' race, income and educational qualification were not found to have a significant influence on work-stimulated stress. These findings imply that age, gender, and marital status of early childhood educators are significant factors in determining work-stimulated stress. Perhaps, female respondents may express work stress more than their male counterparts or the other way around. Similarly, Older early childhood educators may experience work stress more than younger ones as a result of their age and the strength to carry out daily activities as expected. In the same, married educators may experience stress more than single educators. The result of the study is consistent with Rozana, et al (2021) who carried out a study on the relationship between teacher burnout, occupational stress, coping, gender, and age and found that the difference between the stress experienced by male and female teachers was statistically significant which implies that gender was a significant factor in predicting work-stimulated stress among teachers. Similarly, Samad et al. (2010) found that female instructors had worse mental health than male teachers, making them more vulnerable to stress. On the other hand, the result is not in agreement with Rabee (2015) who found that variables of gender were not a significant predictor of work-related stress among teachers.

The amount of stress teachers experience at work is correlated with their age. The finding of the study is also consistent with Darmordy and Smyth (2010) who found that teachers in their forties experienced higher levels of stress than those in younger age groups. But according to a study by Holeyannavar and Itagi (2012), older teachers were less stressed than their younger counterparts which makes the present result disagree with the earlier findings. According to Aftab and Khatoon (2012), older teachers are more seasoned, environment-adaptable, and stress-ready, which justifies the result of the present study.

The study's findings also indicated that respondents' marital status plays a significant role in influencing how much stress is generated at work. According to studies, this demonstrates a relationship between teacher stress and marital status. Stress levels were significant for people who had experienced divorce, separation, or widowhood. Researchers such as Gold and Roth (1993) and Aftab and Khatoon (2012) found that married teachers were less stressed than single educators. Contrarily, as demonstrated by Parveen (2009), married working women reported higher levels of stress at work than single working women. As mothers, wives, and homemakers, they were expected to perform extra duties due to cultural expectations, as well as traditional role classification tendencies.

The result of the study also showed that early childhood educators' educational qualification is not a significant factor in determining work-stimulated stress, but early findings showed that occupational stress and qualifications are associated. For instance, compared to undergraduate and graduate instructors, postgraduate teachers showed "much lower job satisfaction on job role item" (Aftab and Khatoon 2012). Aftab and Khatoon (2012) found that there was a decrease in work stress among instructors with higher academic degrees, such as a bachelor's or higher, compared to teachers with lower degrees, such as a diploma. Studies revealed that experience in teaching was linked to teacher occupational stress in addition to qualifications. The summary of this study, therefore, shows that early childhood educators' age, gender, and marital status are significant factors that induce work-stimulated stress.

Conclusions

The findings of this study as shown in the model indicated that early childhood educators' demographic variables play important role in determining their work-stimulated stress. Specifically, three (i.e. age, gender, and marital status) out of the six demographic variables used in this study had a statistically significant influence on work-stimulated stress among early childhood educators. The researchers, therefore, concluded that out of the demographic variables of the early childhood educators explored in this study, only age, gender, and marital status had a significant influence on work-stimulated stress. Based on the findings of the study, the researchers recommended among other things that while employing early childhood educators, proprietors or employers should take into cognizance the demographics of the employees to prevent employing teachers that are vulnerable to work-related stress.

The study was conducted using only 20 early childhood education centres in one province. Therefore, the findings cannot be used to make a sweeping statement for all other schools in South Africa and across the borders of the country. The study employed a quantitative approach to collect data using a questionnaire. Hence, the findings only emerged from the methods, they cannot be generalised and assumed for other methods of data collection until proven. Hence, we recommend that researchers who want to embark on the study of the same scope for future studies can extend the research to different methods and contexts. Moreover, further study may use qualitative approach or mix method approach in exploring the causal modelling of the influence of demographic

variables on work-stimulated stress among early childhood educators in other province of South Africa or other countries in Africa and beyond.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to restrictions.

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