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A study of the relation between special education burnout and job satisfaction

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The ongoing shortage of special education teachers coupled with increasing attrition rate has caused for a further analysis into why teachers are choosing to leave the field. A quantitative (n = 363) study was completed on the factors that lead to attrition among special education teachers from 34 states in the United States. Canonical correlation analysis was used to determine if there was a statistical significance in job satisfaction (as measured by a set of teaching characteristics) related to teacher burnout (as measured by a set of burnout factors) among public school special education teachers. Results indicate that there was a statistically significant relationship between job satisfaction and burnout among special education teachers. Implications for pre-service education programs, school districts and administrators are discussed as well as retention strategies such as mentoring and providing meaningful professional development opportunities.

In the early 2000s, 98% of school districts across the country were reporting a shortage of qualified special education teachers (Bergert and Burnette, 2001; Boyer and Gillespie, 2000). This issue was acknowledged again in June 2017 when the U.S. Department of Education and Office of Postsecondary Education (2017) announced that 46 states were drastically short special education teachers. Each year approximately 22,000 special education teacher's graduate from certified programs; however, that is only half the number of vacant positions (Katsiyannis, Zhang and Conroy, 2003). Previous studies report one of every four special education teachers will leave their teaching positions each year (McLeskey and Billingsley, 2008; Thornton, Peltier and Medina, 2007). Additionally, Billingsley (2004) found that about 50% of special education teachers quit within the first 5 years. Special education teachers are 2.5 times more likely to leave the classroom after their first year of teaching than other beginning teachers (McLeskey and Billingsley, 2008). Majority of research on attrition identifies burnout as the leading predictor of special education teachers leaving the profession (i.e., Emery and Vandenberg, 2010; Mastropieri, 2001; Shen, McCaughtry, Martin, et al., 2015).

Special education burnout

Special education teachers are required to balance several roles (e.g., case management, individualised instruction, co-teaching) and this requires high demands in mental and physical energy. Overtime, these demands can lead to chronic and persistent job-related stress that can negatively affect an individual's health, well-being, motivation, job performance and student outcomes (Ansley, Houchins and Varjas, 2016; Maslach, 2003; Shen, McCaughtry, Martin, et al., 2015). This is also referred to as burnout. Burnout is the result of prolonged exposure to job-related stress and interferes 'with the ability to experience meaning through one's work' (Emery and Vandenberg, 2010, p. 120).

In education, the most widely used definition and measurement of burnout is given by Maslach and Jackson (1981) (Emery and Vandenberg, 2010). Maslach and Jackson (1981) define burnout using three components: *emotional exhaustion*, *depersonalization* and *personal accomplishment*. Using these factors Maslach, Jackson and Schwab (1986) designed the *Maslach Burnout Inventory: Educator Survey* (MBI-ES) to measure the level of burnout experienced by teachers. Previous studies using the MBI-ES (1986) have found that teachers who feel low levels of personal accomplishment as well as high levels of emotional exhaustion and depersonalization are more likely to experience burnout and ultimately, leave the teaching profession (Brunsting, Sreckovic and Lane, 2014; Williams and Dikes, 2015).

Teachers experience emotional exhaustion when they feel inadequate in coping with the stress and demands of the job. Emotional exhaustion can cause teachers to experience physical deterioration, overburden, low energy, and physical and mental fatigue (Maslach and Jackson, 1981; Maslach, Leiter and Jackson, 1996). However, depersonalization can cause teachers to feel detached from their job, social distancing, dehumanisation of others, and a generally negative attitude towards others and their work. This can cause professional and personal relationships to suffer as well as becoming disconnected with students in the classroom. Teachers experiencing high levels of

depersonalization display cold and distant attitudes towards students and have a difficult time keeping positive feelings of their students. Furthermore, Maslach, Leiter, and Jackson (1996) define a lack of personal accomplishment as feelings of incompetence in one's abilities and feeling unsuccessful. This can result in a teacher feeling unqualified, ineffective and hopeless. Individuals enter education typically because they want to make an impact on young minds. However, when teachers feel they are not contributing to their students' growth, their feelings of personal accomplishment declines (Maslach, Leiter, and Jackson, 1996).

Unfortunately, burnout is known to affect a person's personal life and relationships. A teacher who experiences high levels of burnout may feel too exhausted or uninterested in meaningful engagement with family and friends. Furthermore, individuals may experience complications in their physical and psychological health. This includes getting sick more often, unable to relax, sleep deprivation, depression and neuroticism (Emery and Vandenberg, 2010; Maslach, 2003; Maslach and Jackson, 1981). Ansley, Houchins, and Varjas (2016) also found that special education teachers have to endure prolonged periods of stress that can lead to higher blood pressure, stomach ulcers and anxiety. The high-attrition rate of teachers leaving the field has been directly linked to job-related chronic stress that ultimately, leads to feelings of burnout (Billingsley, 2004; Brunsting, Sreckovic, and Lane, 2014; Maslach, 2003).

In addition to health complications, burnout is associated with negative impacts on student learning. As a teacher's burnout increases, their classroom preparedness and involvement in classroom activities decreases. Criticisms towards their students also increase and as a result, the student's perception of the teacher often becomes more negative. This can have an impact on the student's motivation and self-efficacy in the classroom (Shen, McCaughtry, Martin, et al., 2015). Wisniewski and Gargiulo (1997) found that special education teachers who are experiencing prolonged stress deliver less positive reinforcements are less focused on instruction, and less effective in classroom management. Consequently, the more prolonged stress a teacher experiences, the less effective they are as a teacher (Kaff, 2004; Nichols, Bicard, Bicard, et al., 2008; Paquette and Rieg, 2016).

Job satisfaction

Literature on burnout and attrition of special education teachers attribute low job satisfaction as one of the main indicators to leaving the field (Emery and Vandenberg, 2010; Paquette and Rieg, 2016). Previous studies have found a range of factors that can affect the level of job satisfaction experienced by special education teachers such as the overall school environment, access to resources, and workload manageability (Andrews and Brown, 2015; Bettini, Jones, Brownell, et al., 2017; Boyer and Gillespie, 2000; Brunsting, Sreckovic, and Lane, 2014; Thornton, Peltier, and Medina, 2007). A teacher's perceived level of school support directly impacts their job satisfaction (Mastropieri, 2001; Prather-Jones, 2011). Kaff (2004) found that a lack of administration support is the most frequently referenced source of teachers feeling unsupported by their school environment and causing higher levels of burnout. This includes administrators who do not provide enough support with challenging student behaviours, service delivery, paperwork, and lack knowledge and experience in special education. Special education teachers who experience more support from their administrators are found to be less stressed, more committed to their classroom and school, and report higher job satisfaction (Bettini, Cheyney, Wang, et al., 2015; Billingsley and Cross, 1992). McLeskey and Waldron's (2012) study revealed that job satisfaction among teachers is higher when administrators have more open communication and allow flexible teaching strategies and methods.

Additionally, teachers also identified collaboration issues with other teachers in relation to feeling unsupported and disconnected in the school environment (Andrews and Brown, 2015). Special education teachers often experience a sense of isolation from others in the school due to the lack of meaningful opportunities to interact with colleagues (Gersten, Keating, Yovanoff, et al., 2001). Hamama, Ronen, Shachar, et al. (2013) found that colleague support is largely linked between stress and positive affect. Several studies report that co-teaching often results in the special education teachers being treated as an assistant in the classroom (Bettini, Cheyney, Wang, et al., 2015; Brunsting, Sreckovic, and Lane, 2014; Thornton, Peltier, and Medina, 2007). This causes special education teachers to feel devalued in their knowledge, work and expertise (Bettini, Cheyney, Wang, et al., 2015). However, special education teachers report higher job satisfaction and retention when they feel supported by general education teachers and are provided with meaningful opportunities to collaborate (Davis and Palladino, 2011).

Special education teachers have also referenced a lack of resources as another factor that leads to higher levels of burnout. This includes classroom materials, curriculum, assistive technology, planning time and professional development opportunities (Davis and Palladino, 2011; Gersten, Keating, Yovanoff, et al., 2001; Mastropieri, 2001). Gersten, Keating, Yovanoff, et al. (2001) found that teachers who were provided opportunities to learn on the job were less likely to leave the field. This can be accomplished through meaningful professional development opportunities. However, teachers report a lack of opportunity for professional development and that the training that has been provided in the past was not useful for special education. Professional development for special education teachers should align with program goals and introduce new evidence-based strategies may alleviate

classroom issues (Brownell, Hirsch and Seo, 2004; Shen, McCaughtry, Martin, et al., 2015; Wisniewski and Gargiulo, 1997).

Current study

The increasing rate of special education teachers leaving the field coupled with the accumulating shortage of highly qualified teachers needs to be further investigated. The purpose of this study is to address two main concerns in the gap of literature on burnout for special education teachers. *First*, this study aims to investigate the relationship between teachers having meaningful professional development opportunities, feeling supported by their schools, and whether or not they plan to leave the field (i.e., job satisfaction) with links to burnout as measured by emotional exhaustion, depersonalization, and personal accomplishment. This is an area that has not been specifically explored in relation to special education teachers and how these factors could affect their overall teaching and job satisfaction. *Secondly*, this study analyses the relationship between two sets of variables using canonical correlation analysis (CCA). CCA allows for an analysis between two sets of variables that contain multiple dependent and independent variables (Hair, Anderson, Tatham, et al., 1998; Lewis-Beck, Bryman and Futing Liao, 2004). CCA is known as the most powerful and appropriate multivariate statistic to use when determining statistical significance between several dependent and independent variables (Tabachnick and Fidell, 1996; Thompson, 1984). Previous literature on special education teacher burnout has not explored this multivariate statistic in relation to job satisfaction and the level of burnout experienced by teachers. In doing so, we can begin to determine if factors of job satisfaction such as being provided with meaningful professional development can lead to lower levels of special education burnout.

Therefore, this study uses CCA to determine if there is a statistical significance in job satisfaction (as measured by a set of teaching characteristics) related to teacher burnout (as measured by a set of burnout factors) among public school special education teachers from across the United States. Based on previous research findings, our hypothesis is that teacher burnout and job satisfaction are statistically correlated. Through this analysis, pre-service education programs, school districts and administrators can examine these interwoven variables and come up with proactive strategies to alleviate job-related factors that are increasing burnout and decreasing overall job satisfaction.

Method

Participants

In order to answer the research question, we targeted public special education teachers from elementary, middle and high schools as our participants. We decided not to include participants from the private or charter sectors due to varying environmental factors (e.g., funding, paperwork, caseload size). A total of 363 public special education teachers from 34 states completed our survey on burnout. Of those, 81% (n = 294) were female although 18% (n = 64) were male. Furthermore, 91% (n = 330) of the teachers were Caucasian compared to 5.5% (n = 20) Black or African American, 1.9% (n = 7) American Indian or Alaska Native and 0.8% (n = 3) Asian. The age of the participants varied with 46% (n = 166) being between the ages of 20 and 39 years of age to 53% (n = 192) being 40 or older. Majority of the participants held a master's degree (65%; n = 234) followed by a bachelor's (27%; n = 98).

School factors also varied across participants. About 36% (n = 130) of the participants identified teaching in an elementary setting (Pre-K through fifth grade) although 25% (n = 92) taught middle school (sixth through eighth) and 36% (n = 131) in secondary settings (ninth grade to age 21). Nearly half of the participants taught at Title I schools (48%; n = 173). In addition, about half of the participants taught in suburban areas (51%; n = 185). Majority of the participants (45%; n = 163) were responsible for a caseload of 16 or more students identified with a disability as categorised by the Individuals with Disabilities Education Act (IDEA) of 2004. About 80% (n = 292) of the participants held a teaching certification in education as opposed to an emergency or alternative license. Half of the participants (n = 179) had over 11 years of teaching experience although the other half (n = 183) of our participants had less than 10 years of experience.

Measures

An electronic survey method was used to collect data nationwide. The survey consisted of the 22-questions from the MBI-ES (1986). The MBI-ES (1986) is the most widely used instrument for measuring burnout among educators (Emery and Vandenberg, 2010; Maslach, Leiter, and Jackson, 1996). The 22-question inventory uses a seven-point likert-scale that is comprised of three subscales: *emotional exhaustion*, *depersonalization* and *personal accomplishment*. The likert-scale ranges from 0 to 6, where 0 = *never*; 1 = *a few times a year*; 2 = *once a month*; 3 = *a few times a month*; 4 = *once a week*; 5 = *a few times a week*; and 6 = *everyday* (Maslach, Jackson, and Schwab, 1986). Scoring involves adding subscales to obtain a score for each of the three factors. The total subscores are then compared to a range of scores in the *MBI Manual* (1996) to determine the level of burnout (i.e., low, average and high) experienced by each participant.

We used the MBI-ES (1986) in its original form without any changes in questions, procedures and scoring. In this study, we found Cronbach alpha internal consistency reliability was 0.80 for the entire MBI-ES instrument. Additionally, Cronbach alpha for each subscale was 0.91 for emotional exhaustion on nine items, 0.68 for

depersonalization on five items and 0.71 for personal accomplishment on eight items. In addition to the MBI-ES (1986), the survey included 13 demographic and teaching-related questions. Also included were three binary questions related to job satisfaction. The three binary questions were: *Do you feel supported by your school?*; *Does your school provide meaningful professional development?*; and *Do you plan on leaving the field in the next five years?* These questions were used to formulate the level of job satisfaction of each participant.

Procedures

To receive a considerable sample size of public special education teachers from across the United States, an online survey method was used during the 2016–2017 school year. The Qualtrics (2017) survey system was selected to distribute the surveys by email and to maintain the confidentiality of participants. Following approval from the Institutional Review Board (IRB), participants received a link in an email asking them to complete an anonymous survey about the satisfaction and stress of being a special education teacher. Participants had to open the link and consent to the study before any survey questions were visible. The consent outlined the purpose of the study and safeguards including how each participant's identity would stay completely unidentifiable. Surveys took appropriately 10–15 minutes to complete.

Initially, the researchers contacted 125 special education teachers who were asked to complete the survey and forward to their colleagues and other special education teachers. A snowball sampling technique was used in order to obtain as many participants as possible. This technique allows for respondents to forward the anonymous email link to other special education teachers who they may know (Coleman, 1958).

Analysis

Quantitative analysis, more specifically multivariate, was chosen for this study in order to appropriately address the research question: Is there a statistical significance in job satisfaction (as measured by a set of teaching characteristics) related to teacher burnout (as measured by a set of burnout factors) among public school special education teachers from across the United States? Furthermore, quantitative techniques are more suitable for analysing larger sample sizes as opposed to other research methods. Multivariate also allows for various variables to be analysed and taken into account simultaneously (Pituch and Stevens, 2016). Therefore, we are able to use multivariate statistics to analyse various factors that when combined may contribute to feelings of burnout among special education teachers.

Canonical correlation analysis is an appropriate multivariate statistic when examining the relationship between two sets of variables as well as the interrelationships among multiple independent and dependent variables (Hair, Anderson, Tatham, et al., 1998; Lewis-Beck, Bryman, and Futing Liao, 2004; Thompson, 1984). Each set of variables was identified as dependent variables (Y) or independent variables (X). With CCA, we are trying to determine the number of significant pairs of canonical variates (different dimensions or linear combinations between the dependent and independent variables) in a data set. CCA uses four correlation matrices to determine individual (R_{yy} and R_{xx}) and combined (R_{yx} and R_{xy}) correlations (Schumacker, 2016). Schumacker (2016, p. 148) identified the standard formula for CCA as: $R = R_{yy}^{-1} R_{yx} R_{xx}^{-1} R_{xy}$. Therefore, for this study, CCA was appropriate to use to analyse the correlation between various dependent variables (i.e., burnout defined as *emotional exhaustion*, *depersonalization* and *personal accomplishment*) and independent variables (i.e., job satisfaction defined as *feeling supported*, *leaving the field* and *professional development opportunities*) for special education teachers.

Prior to the analysis, G*Power (Faul, Erdfelder, Lang, et al., 2007) was used to determine the number of participants needed. This is especially important considering that CCA is not robust to sample size issues (Schumacker, 2016). A two-tailed correlational t-test was conducted in G*Power (2007) using an alpha of 0.05, a moderate effect size ($r^2 = 0.3$), and power of 0.8. G*Power (2007) indicated a sample size of at least 82 participants were needed. Previous studies such as Costello and Osborne (2005) have suggested that CCA requires at least 20 subjects per variable for sufficient power and adequate results (as cited in Schumacker, 2016). Therefore, 363 participants is a large enough sample size in order to perform CCA.

Additionally, the MBI-ES (1986) three subscales (i.e., *emotional exhaustion*, *depersonalization* and *personal accomplishment*) were transformed from a likert-scale to a scale of 0–100 with equal levelling. The many-facet Rasch model was used to adjust the raw score ratings in order to analyse and compare scores with ease and without rater bias (Allen and Schumacker, 1998). Using the WinStep (Linacre, 2017) software, the likert-items were entered and converted into calibrated logit values using suitable means and standard deviations (mean $\pm$ logit * standard deviation) for each level of questioning (Bond and Fox, 2007). This allows variables (facets) to be compared to one another through equal levelling (Allen and Schumacker, 1998).

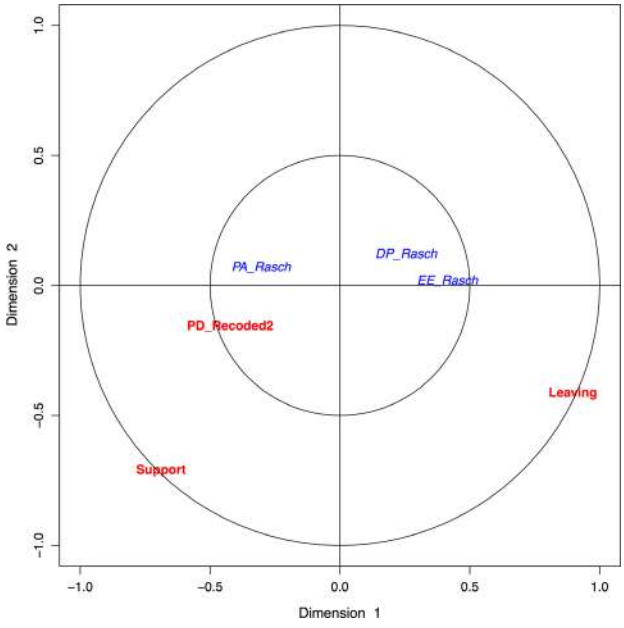
Several assumptions must be met in order to use CCA. This includes checking for missing data due to the sensitive of CCA (Schumacker, 2014). Missing data for cases by variables were less than 5% (0.04%; n = 33); therefore, we can conclude that the data were missing at random (MAR). Using IBM SPSS Statistics version 23 (2013), expectation-maximisation (EM) was appropriate to use in replacing any missing data (Pituch and Stevens,

2016). CCA is also robust to outliers and multicollinearity. A linear regression using Mahalanobis distance was used to check for outliers (df = 20.515; $P < 0.0001$), linearity and multivariate normality. Graphical assessments of homoscedasticity for both sets variables were used to assess multicollinearity and normality assumptions. The Shapiro-Wilks ($P > 0.05$), kurtosis and skewness of the data were also analysed for univariate normality. Results indicated a value of less than two for both kurtosis and skewness. Therefore, we can conclude that the distribution between and within each set of variables does not differ greatly from a normal distribution (Pituch and Stevens, 2016). Furthermore, a Box *M* test ($P > 0.5$) was used to assure equal variance among the data (Schumacker, 2016). All prior assumptions were met in order to ensure power and significance of CCA. Therefore, CCA was analysed using the CanCorr function on IBM SPSS Statistics, version 23. The data were also analysed in R Studio (2017) version 1.1.383 in order to verify the canonical findings and display a plot of canonical variates.

Results

Using CCA, we analysed whether job satisfaction variables were related to burnout scores. The burnout variables were *emotional exhaustion*, *depersonalization* and *personal accomplishment* from the MBI-ES (1986). However, the job satisfaction variables were comprised of *feeling supported by their school*, *leaving the field* and *professional development opportunities*. The variables related to job satisfaction were weaker in dimension structure than the burnout variables. Figure 1 shows a plot of canonical variates in relation to the two sets of variables. This plot was configured in R Studio (2017) version 1.1.383. The plot shows that the job satisfaction variables are not centralised; however, the burnout scores are more centralised. Thus, the burnout variables show a single dimension.

Figure 1: The plot of canonical variates is used to determine the relation between job satisfaction and burnout scores. The plot shows that the burnout scores were centrialised although the job satisfaction scores are not. Thus, the burnout variables show a single dimension.



However, the results in Table 1 indicate two statistically significant canonical variates (dimensions). The first significant correlation yielded canonical $r_1 = 0.471$ [$F(9, 868) = 11.67$, $p < 0.0001$]. We can use squared canonical correlations, also known as eigenvalues, to provide an estimate in the amount of shared variance between independent and dependent weighted canonical variates (Schumacker, 2016). Therefore, the squared canonical correlation indicated $r^2 = 0.22$, a medium effect size. This means that the first squared canonical correlation accounted for about 22% of the explained variance.

The second significant correlation variate yielded canonical $r_2 = 0.164$ [$F(4, 716) = 2.47$, $p = 0.04$]. The second squared canonical correlation indicated, $r^2 = 0.03$, a very small effect size of about 3% added to the variance explained. We should note that this is after the first variate explained as much variance as possible. Canonical correlation results are orthogonal; therefore, the second variate only accounts for the variance that is leftover (Sherry and Henson, 2005). The third canonical correlation was not statistically significant to the overall variance, $r_3 = 0.016$ [$F(1, 359) = 0.09$, $p = 1.028$].

The overall effect size can be determined by adding the significant squared canonical correlations, such that: $(0.22 + 0.03) = 0.25$. Thus, this is a medium effect size where the overall variance explained by the variates is 25%. In addition, Table 2 shows the unstandardised and standardised canonical coefficients for both canonical variates. Using the canonical loadings, we can determine which variables are significant to the overall scores by using a medium correlation of 0.3. Therefore, in the first dimension, the burnout variables were influenced by all three factors; however, they were most heavily influenced by emotional exhaustion and personal accomplishment. Similarly, job satisfaction variables were highly influenced by the leaving and support factors, although all

Table 1: *F* test for canonical correlations

Canonical variate	Correlation	Wilk's λ	Chi-squared	*F* (df1, df2)	*p*	Effect size r^2
1	0.471	0.757	99.58	11.67 (9, 868)	<0.0001	0.22
2	0.164	0.973	9.89	2.47 (4, 716)	0.04	0.03

Table 2: Canonical variates (two-dimensions)

	Unstandardised		Standardised	
Dimension	1	2	1	2
Burnout				
Emotional exhaustion	−0.067*	−0.009	−0.729*	−0.099
Depersonalization	−0.006*	0.042*	−0.141*	0.976*
Personal accomplishment	0.024*	0.038*	0.437*	0.687*
Job satisfaction				
Leaving	−1.461*	1.501*	−0.731*	−0.751*
Support	0.831*	−2.069*	0.386*	−0.976*
Professional development	0.393*	−0.061	0.185*	−0.029

Note: *Significantly related to overall score.

three scores were significant to the overall effect. For the second dimension, burnout was most influenced by depersonalization and personal accomplishment. Additionally, for the second dimension, job satisfaction was influenced by leaving and school support.

Finally, a redundancy analysis was performed in order to assess that each variable is measuring its own latent score better than other variables. Canonical loadings were analysed to ensure that they were greater than cross loadings. Results from the redundancy analysis indicated that all the latent scores aligned with the individual variables. Thus, each variable measured its own latent score.

Discussion

The purpose of this study was to use CCA to determine if there was a statistically significant relation between teacher burnout (as measured by a set of burnout factors) and job satisfaction (as measured by a set of teaching characteristics) among public school special education teachers from across the United States. Results indicated two statistically significant canonical correlations between job satisfaction and level of teacher burnout. Therefore, we accept our hypothesis and conclude that there is a statistically significant relationship between teacher burnout scores and job satisfaction. Thus, teachers who experience lower levels of job satisfaction are also likely to experience higher burnout. This indicates that if we want teachers to experience lower levels of burnout and stay in the classroom, we have to improve their job satisfaction. Job satisfaction includes providing meaningful professional development opportunities and helping them feel supported by their school.

Recommendations

Several studies have indicated strategies to increase job satisfaction as it relates to professional development, feeling supported by their school environment, and increasing retention. Studies have found that special education teachers feel more supported by their school when they have administrators that value their input, provide effective feedback and involves the teacher in decision-making (Bettini, Cheyney, Wang, et al., 2015; Prather-Jones, 2011). However, prior research has found that administrators report feeling unprepared in how to best support special education teachers (Bettini, Cheyney, Wang, et al., 2015). Pre-service education programs should re-examine how they are preparing future administrators and evaluate whether they are providing administrators with enough knowledge about special education and stress management strategies to help support their teachers (Prather-Jones, 2011; Shen, McCaughtry, Martin, et al., 2015). Administrators should provide positive reinforcement and rewards to the special education teachers to help alleviate self-doubt and instil commitment and motivation (Boyer and Gillespie, 2000; Gersten, Keating, Yovanoff, et al., 2001; Mackenzie, 2012). Ansley, Houchins, and Varjas (2016) also acknowledged the need for administrators to implement mentoring programs. Mentoring programs are used to assist a novice teacher by providing a supportive relationship with a veteran teacher. Mentoring programs have shown to reduce the workload and stress often experienced in a new classroom and ultimately, reduce attrition among novice teachers (Ansley, Houchins, and Varjas, 2016; Gersten, Keating, Yovanoff, et al., 2001; Mullen, 2011; Wasburn, Wasburn-Moses and Davis, 2012).

Furthermore, studies have indicated that special education teachers who experience meaningful professional development opportunities that are relevant to their classrooms and enhances their learning results in higher rates of job satisfaction (Grant, 2017; Wasburn-Moses, 2005). Gersten, Keating, Yovanoff, et al. (2001) also found that special education teachers who felt they had the opportunity to learn and grow in their profession were less likely to leave the field. This includes additional training related to: (i) special education laws, (ii) requirements, (iii) technology, (iv) evidence-based practices, (v) addressing student behaviours and (vi) classroom management techniques (Bettini, Cheyney, Wang, et al., 2015; Kaff, 2004; Wasburn-Moses, 2005).

School districts have also been pushed to provide comprehensive workshops that address time management, coping skills, and relaxation techniques to help resist feelings of burnout (Shen, McCaughtry, Martin, et al., 2015). The Centers for Disease Control issued a paper (Kolbe and Tirozzi, 2011) emphasising the need for school districts to start wellness programs that include stress management interventions. Wellness programs have shown to increase teacher attendance and lower stress and anxiety. School districts need to allow for a larger budget for wellness programs and trainings to provide teachers with proactive strategies for dealing with work-related stress (Ansley, Houchins, and Varjas, 2016; Kolbe and Tirozzi, 2011; Mastropieri, 2001).

Additionally, professional development opportunities that require special education teachers and general education teachers to learn how to successfully implement co-teaching and inclusion would be beneficial in relieving barriers that arise with collaboration (Thornton, Peltier, and Medina, 2007; Wasburn-Moses, 2005). Moreover, special education teachers have indicated they feel more supported by their schools when they are provided with meaningful opportunities to collaborate with other teachers in the school. Administrators should strive to provide their special education and general education teachers with more time to collaborate and co-plan. Balanced colleague relationships that are grounded in open communication, decision-making and respect for each others expertise are positively correlated with teachers feeling more supported by their school environments (Bettini, Cheyney, Wang, et al., 2015; Brownell, Hirsch, and Seo, 2004; Gersten, Keating, Yovanoff, et al., 2001). Pre-service programs should place more emphasis on teaching collaboration techniques in the context of general education (Kaff, 2004; Mastropieri, 2001).

Limitations of the present study

Although the findings in this study provide valuable information for attrition and retention of teacher burnout, several limitations should be addressed in future research. This study is limited by narrow sample, consisting of mostly White people, female teachers from the southern United States. Future studies should seek a more heterogeneous sample across characteristics such as gender, ethnicity and regions of the country. Another limitation was the use of self-reported data and participation was voluntary. This could have an affect on our results if teachers who were feeling more or less burned out were more likely to complete the survey. A response rate was unobtainable because participants could forward the survey to their colleagues. A multivariate statistic was chosen because it allows for a considerable sample size to be analysed in order to determine any relationships between several variables. However, multivariate statistics do not allow researchers to analyse individual differences from participants. More research using various methodologies is needed to generalise the relationship between teacher burnout and job satisfaction. Additionally, it is likely that other factors contribute to job satisfaction and teacher burnout than the variables that were directly addressed in this study. Results should be used to inform and promote future research in the area of teacher attrition and job satisfaction.

Conclusions and future prospects

Special education teachers are under tremendous amounts of stress due to job demands that can ultimately lead to lower levels of job satisfaction and higher levels of attrition (Brunsting, Sreckovic, and Lane, 2014). This study indicates a statistically significant relationship between job satisfaction and the level of burnout experienced by special education teachers. Similar to previous findings, this analysis echoes the urgency in addressing burnout among special educators is pivotal. The findings in this study strengthen the argument for a greater emphasis on retention strategies and supporting special education teachers in the classroom. Through this analysis, pre-service education programs and school districts including administrators can assess these interconnecting variables to assist in coming up with proactive strategies to increase job satisfaction and in result, decrease the level of burnout. Schools districts and administrators need to focus on increasing job satisfaction in order to decrease burnout rates among special education teachers. Future studies are needed to examine how to improve job satisfaction for special education teachers and how this affects the level of burnout experienced by those teachers.

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