School burnout is a relatively new area of interest and as such, it is in need of foundational research. One area requiring further investigation is the construction and testing of developmental models which outline the causal relationships between emotional exhaustion, cynicism, and feelings of inadequacy. The current research explored the development of burnout by comparing and contrasting four competing theoretical frameworks (Golembiewski, 1989; Leiter, 1989, Lee & Ashforth, 1993, Taris et al., 2005). These frameworks were submitted to testing in Mplus with a sample of 852 Finnish students tested on four separate occasions. The results suggested that Taris et al.’s (2005) framework fitted the data significantly better than the alternative theoretical models. The parameters of this model suggested that (a) school burnout is moderately to strongly consistent over time; (b) cynicism predicted feelings of inadequacy over time as indicated by Golembiewski’s and Leiter’s frameworks; and (c) emotional exhaustion predicted feelings of inadequacy over time as indicated by Lee and Ashforth’s and Taris et al.’s frameworks. Substantive and applied implications are discussed.

While the concept of burnout has largely developed and been applied to occupational fields, the application of the construct to school domains has long been of interest for research in educational psychology (e.g., Fimian & Cross, 1986). The application of burnout to students suggests that, like work, school requires individuals’ to engage with a number of achievement pressures. Burnout emerges as a response to students’ ongoing difficulties in coping with these pressures (Salmela-Aro, Kivuro, Leskinen, & Nurmi, 2009). Formally, school burnout can be considered to represent a chronic stress response in students who are initially engaged with their schooling, which results from a discrepancy between students’ resources and their own or others expectations for their success in school (Frydenberg & Lewis, 2003; Salmela-Aro et al., 2009).

While empirical research on the implications of burnout has focused on occupational settings, research indicates that students experience levels of burnout that are comparable to levels noted in known stressful occupations (Pines, Aronson, & Kafry, 1981). Given the individual, institutional, and social costs of occupational burnout (see Schaufeli & Enzmann, 1998 for a review), the finding that burnout levels in school are of a similar level to those found in the workplace is in itself troubling (Pines et al., 1981). Furthermore, findings from empirical research on school burnout to date indicates that it is associated with serious behavioral and psychological problems such as depression, absenteeism, and school dropout (Covington, 2000; Fimian & Cross, 1986; Frydenberg & Lewis, 2004; Salmela-Aro et al., 2009; Yang, 2004). As such, a greater understanding of how burnout in students develops is important for both substantive and applied concerns. The current research provides a longitudinal test of several major developmental theories of burnout, applied to a four wave sample of Finnish school students.

Burnout Theory and Developmental Processes

Consistent with theoretical advances in the occupational literature (see Maslach, Schaufeli, & Leiter, 2001), research on school burnout has moved beyond the consideration of burnout as a unidimensional outcome and has begun to explore the construct validity of school burnout from a multidimensional perspective consisting of emotional exhaustion, cynicism, and feelings of inadequacy (Salmela-Aro et al., 2009). While this has been advantageous to understanding student well-being, there is a lack of research on the causal relationships between these factors which might give insights into the developmental processes underlying school burnout. Such research has proved useful in occupational settings where a number of theories of burnout progression have been advanced (see Schaufeli & Enzmann, 1998 for a review). Research into these theoretical frameworks, however, is generally preliminary with Maslach, et al. (2001) noting a prevalence of cross-sectional research. Nevertheless, some research exists which has explored the validity of several developmental models of which several have some...
level of empirical support.

Golembiewski’s (1989) provides one such model which has been found to predict important aspects of well-being and achievement (Golembiewski, 1989; Schaufeli & Enzmann, 1998). This model suggests that burnout develops in phases, resulting in eight distinct clusters representing progressively more maladaptive states (Golembiewski, 1989; Golembiewski, Boudreau, Goto, & Murai, 1993; Golembiewski, Munzenrider, Carter, 1983). This phasing model suggests that cynicism develops first and is followed by feelings of inadequacy with emotional exhaustion emerging in more virulent stages of burnout (Golembiewski, 1989; Taris et al., 2005). Leiter’s model (1989; see also Leiter & Maslach, 1988) has been show in some empirical research to provide a better account of the development of burnout than Golembiewski’s model (Lee and Ashforth, 1993; Schaufeli & Enzmann, 1998; Taris et al., 2005). This model indicates that emotional exhaustion is the initial component of burnout which leads to cynicism developing as an ineffective coping strategy, cumulating in feelings of inadequacy (Leiter, 1989). Empirical research in the occupational field has generally supported the link between emotional exhaustion and cynicism but the lack of evidence for the link between cynicism and feelings of inadequacy has resulted in alternative models to account for this discrepancy (Maslach et al., 2001). In this regard, Lee and Ashforth (1993) provided longitudinal support for a model based on Leiter’s in which emotional exhaustion predicts both cynicism and feelings of inadequacy. Finally, the most extensive research on developmental models conducted by Taris et al. (2005) suggested an alternative model which combined Leiter’s framework with Lee and Ashforth’s, where emotional exhaustion has both direct and indirect effects on feelings of inadequacy via cynicism.

Current Research and Applied Implications

The current research submitted these major development- nal models of burnout to a four wave longitudinal sample of Finnish school students to empirically compare their predictive validity. As such, this research aimed to compare and contrast Leiter (1989), Golembiewski’s (1989), Lee and Ashforth’s (1993), and Taris et al.’s (2005) integrative model in order to ascertain which, if any, of these models provides an account of the development of burnout in school students. A model was considered to provide a good explanation of the development of school burnout if it: (a) produced a good fit to the data, (b) had interpretable and sensible parameter estimates consistent with theory, and (c) provided a significantly better fit than competing models. Such research is important as each theory has different implications for schools and practitioners interested in adolescent well-being and engagement and thus the need for research which compares their validity.

Method

Participants

Participants were initially in year nine at the first wave of data collection and came from all schools in a medium sized town in Finland. Response rates were very high over the four waves of data ranging from 67 percent (N = 642) at Time 2 to 86 percent (N = 818) at Time 3. In total, 852 students or 88 percent of the available sample participated in at least one Time wave. In total, 52 percent of the sample was female (N = 444). Wave 1 students were surveyed at the beginning of year nine when most students were 16 years of age. Wave 2 was conducted at the end of year nine, nine months later, just prior to the student’s transition into secondary education. Wave 3 and Wave 4 consisted of students surveyed approximately one and two years later when they were in their first and second year of secondary education respectively. Students completed the survey instrument during a school event planned for the research. To maximize response ratings, students not present during the research event were mailed the questionnaire and/or were contacted via telephone.

Materials

School burnout was examined with the School Burnout Scale (BBI-10) developed by Salmela-Aro and Nn (2005; see also Salmela-Aro et al., 2009). The scale consists of 9 items measuring school burnout. Three items measured cynicism (e.g., “I have become less interested in school work and I often think of dropping out of school”) and two items measured feelings of inadequacy (e.g., “I expected to do better academically than I have done”). At Time 1, emotional exhaustion was measured by three items (e.g., “I feel overwhelmed by school work”), however, an additional item was added for Waves 2 to 4 to increase content coverage and internal consistency. All items were rated on a 6-point scale (1 = strongly disagree, 6 = strongly agree). Previous research has demonstrated the excellent construct validity and internal consistency of the School Burnout Scale. In particular, construct validity has been established via confirmatory factor analysis, indicating the data fits the hypothesized 3-factor measurement structure well (Salmela-Aro et al., 2009). Likewise, convergent and divergent validity indicates burnout is associated with depression, achievement, and school engagement in expected patterns (Salmela-Aro et al., 2009).

Analysis

The current research used manifest variable to test a set of longitudinal panel models consisting of auto-regression paths plus the paths hypothesized by the relevant theoretical framework (cross-lagged paths). These were explored in Mplus where each model was estimated in a single step. In the current research, fit was measured via the chi-squared statistic, the Root Mean Square Error of Approximation (RMSEA) and the Confirmatory Fit Index (CFI) (Hoyle, 1995). For the RMSEA, values under .08 were considered to represent acceptable fit and values under .05 were considered
to represent an excellent fit to the data (Marsh, Hau, & Wen, 2004). For the CFI, values of .90 and above were considered to represent a good fit to the data and values over .95 were considered to represent an excellent fit to the data (Marsh, Hau, & Grayson, 2005; McDonald & Marsh, 1990). In comparing models, focus was placed on the Chi-squared statistic and Akaike’s Information Criterion (AIC) which is useful for choosing between a set of competing models where smaller AIC values indicate better fitting models (Bozdogan, 1987). As is common with longitudinal data, missing data was a potential concern due to participant drop-out (Duncan, Duncan, & Strycker, 2006). In the current study, missing data ranged from 14% to 23% for the variables of interest. In order to address this issue, the current research used full-information-maximum-likelihood (FIMIL) estimation to missing data which combines parameter estimation with missing data analysis.

Results

Analysis begun by exploring psychometrics, internal consistency, and correlations between the three burnout scales across the four time waves (see Table 1 and 2). Results suggested that the scales displayed moderate to high levels of internal consistency ranging from an average of .68 for feelings of inadequacy to .85 for cynicism. Means and standard deviations were all relatively consistent over time and skewness and kurtosis where within the cut-off points for normality for all scales at all time periods (West, Finch, & Curran, 1995). Correlations indicated that the three burnout factors were moderately related within time and moderately stable across time.

Following from this, Mplus was used to estimate the four hypothesized models, as well as a stability model in which only the autoregression effects were included. This model was used to test the null hypothesis that there was no causal relationship between the three burnout factors over time (e.g. Salmela-Aro et al., 2009). Table 2 displays the fit indices for the null and the four hypothesized models. Importantly, while the null model provided a good fit to the data, on the basis of the chi-squared difference test and the AIC, every hypothesized model fitted the data significantly better than the stability model. Leiter’s (1989) and Golembiewski’s (1989) developmental models fitted the data equally well with similar chi-squared statistics and AIC indices. On the basis of the Chi-Square and AIC measures, the Lee and Ashforth model was the worst fitting hypothesised model. The Taris et al. (2005) integrative model, which combined the Maslach and Leiter and the Lee and Ashforth theoretical frameworks, was observed to be the best fitting model. Indeed, the AIC indicated a substantially better fitting model than all other models while a chi-squared difference test indicated that this model provided a significantly better fit then the other theoretical models (see Table 2).

While this research was consistent with Taris et al.’s (2005) research, inspection of the parameter estimates revealed a slightly different model than found in their research. For example, while Taris et al.’s model indicated reciprocal paths between emotional exhaustion and cynicism, no significant relationships was found between these constructs in this research. Rather, cynicism and emotional exhaustion were consistent predictors of feelings of inadequacy, with emotional exhaustion predicting higher levels from Time 1 to Time 2 (B = .16, p < .001) and from Time 2 to Time 3 (B = .11, p < .001). Likewise, cynicism predicted greater feelings of inadequacy from Time 1 to Time 2 (B = .14, p < .001), Time 2 to Time 3 (B = .13, p < .001), and Time 3 to Time 4 (B = .16, p < .001). While these effects are small, it should be noted that the results were significant after controlling for the strong stability of the burnout factors.

Despite the small effect sizes, these results provide a potential explanation for why Golembiewski’s and Leiter’s frameworks fitted the data equally well despite their theoretical differences. Namely, that the most consistent developmental process found in this research was present in both frameworks (cynicism precedes feelings of inadequacy). Likewise, the path from emotional exhaustion to feelings of inadequacy supported Lee and Ashforth’s and Taris et al.’s frameworks which include this process. These results suggest a new integrative model where both emotional exhaustion and cynicism are joint predictors of feelings of inadequacy, thus including processes from all four theoretical models. This model (Model E) was then submitted to testing where chi-squared difference tests indicated a similar fit to model D while the AIC and other fit statistics suggested a marginally better fit. Modification indices were also explored for this model but did not suggest any additional cross-lag paths for Time 1 to Time 3 or Time 4, or from Time 2 to Time 4 variables.

Discussion

The current research aimed to compare and contrast several major theoretical models in order to identify which, if any, model best represented the development of school burnout in a four-wave longitudinal sample of Finnish high school students. From the perspective of model fit, the current research suggested that Taris et al.’s (2005) integrative model provided a significantly better fit to the data than the alternative models. This could indicate that similar developmental processes underlie both school and occupational burnout. However, when the parameters were explored, a somewhat divergent model became apparent.

While the effect of cynicism on feelings of inadequacy was replicated in the current research, the reciprocal relationship between cynicism and emotional exhaustion was not. Instead, a significant and consistent effect was found for emotional exhaustion on feelings of inadequacy overtime. While this supports the path from cynicism to feelings of inadequacy common to Leiter’s and Golembiewski’s developmental theories and the path from emotional exhaustion to feelings of inadequacy common to Lee and Ashforth’s and Taris et al.’s frameworks, no model which integrates these developmental processes has been posited in the literature. It is important to note, however, that the effect sizes of substantive paths in this research were small and thus additional
Table 1
Reliabilities and Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Reliability</th>
<th>Means</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>.76 (.59 -.81)</td>
<td>2.6 (2.5 - 2.7)</td>
<td>1.05 (1.98 - 1.18)</td>
<td>.56 (.52 -.64)</td>
<td>.15 (.13 - [.28])</td>
</tr>
<tr>
<td>CY</td>
<td>.85 (.82 -.87)</td>
<td>2.3 (2.2 - 2.4)</td>
<td>1.14 (1.08 - 1.23)</td>
<td>.86 (.75 - .90)</td>
<td>.35 (.21 - .51)</td>
</tr>
<tr>
<td>IA</td>
<td>.68 (.61 -.76)</td>
<td>2.6 (2.5 - 2.6)</td>
<td>1.17 (1.11 - 1.27)</td>
<td>.39 (.29 -.55)</td>
<td>-.52 ([-.72] - [.36])</td>
</tr>
</tbody>
</table>

EE = Emotional Exhaustion, CY = Cynicism, IA = Feelings of Inadequacy.

Values outside of brackets indicate mean values across the four time periods. Values in brackets indicate value ranges across the four time waves.

Mean given represents the average of the absolute values.

Table 2
Reliabilities and Descriptive Statistics

<table>
<thead>
<tr>
<th>Time1</th>
<th>Time2</th>
<th>Time3</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>CY</td>
<td>IA</td>
</tr>
<tr>
<td>T1.EE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2.EE</td>
<td>.46</td>
<td>.28</td>
</tr>
<tr>
<td>T3.EE</td>
<td>.46</td>
<td>.23</td>
</tr>
<tr>
<td>T4.EE</td>
<td>.44</td>
<td>.17</td>
</tr>
</tbody>
</table>

EE = Emotional Exhaustion, CY = Cynicism, IA = Feelings of Inadequacy.

research is needed in order to identify whether this integrative model adequately explains the development of burnout in school students.

Notwithstanding this, such a model is consistent with Lazarus and Folkman’s (1984) transactional model of stress and coping which suggests the effect of coping strategies on outcomes is moderated by the appraisal of relevant stressor. Thus, it is the fit between appraisal (e.g. emotional exhaustion) and the strategy employed to cope with that appraisal (e.g. cynicism) that can be used to explain maladaptive or adaptive outcomes of the stress process (e.g. feelings of inadequacy) (Conway and Terry, 1992, Zakowski, Hall, Klein, & Baum, 2001). Framing the final model in relation to the transactional model of stress and coping is important as this framework of stress has been successfully applied to school students providing a theoretical basis for applied concerns (Cooper, Dewe, & O’Driscoll, 2003; Frydenberg, 1997; Frydenberg & Lewis, 2003).

**Applied Significance**

Comparing and contrasting developmental models of school burnout is not just important from a substantive perspective but, given the divergent implications of the different models, is also central to helping schools and practitioners interested in student well-being interventions. From the perspective of existing developmental models of burnout, Golembiewski’s suggests a need to focus on the transition from the effective coping strategy of distancing one’s self from stressors to the ineffective strategy of cynicism which interferes with individuals’ ability to access important avenues of support (Taris et al., 2005). In contrast, the remaining models (Leiter’s, Lee and Ashforth’s, Taris et al.’s) all suggest focusing on emotional exhaustion as an initial and central feature of burnout (Leiter, 1989; Schaufeli & Enzmann, 1998). The transactional model of stress and coping is also well-suited to explaining the joint importance of emotional exhaustion and cynicism in predicting feelings of inadequacy found in this research. While the current research represents early research in this area, several applied hypotheses can tentatively be advanced. Namely, burnout may be best treated by a focus on both how students appraise stressors and on choice of coping strategies employed in response (see Frydenberg, 1997; Lazarus & Folkman, 1984). Such hypotheses should be tested using methods, such as propensity score matching or experimental methods, which are well suited to assessing such claims.

**Conclusions, Limitations and Implications for Future Research**

The current research provided a strong test of competing developmental models of school burnout as it utilized cross-lag analysis and data well positioned to explore is-
Table 3
Fit Indices of Competing Models

<table>
<thead>
<tr>
<th>Model</th>
<th>CFI</th>
<th>RMSEA</th>
<th>AIC</th>
<th>Chi²</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null</td>
<td>.93</td>
<td>.08</td>
<td>20601</td>
<td>277</td>
<td>45</td>
</tr>
<tr>
<td>A</td>
<td>.95</td>
<td>.08</td>
<td>20560</td>
<td>224</td>
<td>39</td>
</tr>
<tr>
<td>B</td>
<td>.95</td>
<td>.07</td>
<td>20558</td>
<td>223</td>
<td>39</td>
</tr>
<tr>
<td>C</td>
<td>.94</td>
<td>.08</td>
<td>20578</td>
<td>243</td>
<td>39</td>
</tr>
<tr>
<td>D</td>
<td>.95</td>
<td>.07</td>
<td>20544</td>
<td>202</td>
<td>36</td>
</tr>
<tr>
<td>E</td>
<td>.95</td>
<td>.07</td>
<td>20542</td>
<td>206</td>
<td>39</td>
</tr>
</tbody>
</table>

EE = Emotional Exhaustion, CY = Cynicism, IA = Feelings of Inadequacy.

*Indicates the models which are significantly better fitting than the stability model, via the Chi-squared difference test.

Indicates that Model D is a significantly better fitting model than Models A, B, C, via the Chi-squared difference test.

Indicates that Model E is not significantly different from Model D, via the Chi-squared difference test.

Table 4
Parameter Estimates for Model E

<table>
<thead>
<tr>
<th>Paths</th>
<th>Time1-2</th>
<th>Time2-3</th>
<th>Time3-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE-EE</td>
<td>.45</td>
<td>.48</td>
<td>.57</td>
</tr>
<tr>
<td>CY-CY</td>
<td>.47</td>
<td>.45</td>
<td>.55</td>
</tr>
<tr>
<td>IA-IA</td>
<td>.21</td>
<td>.22</td>
<td>.36</td>
</tr>
<tr>
<td>EE-IA</td>
<td>.12</td>
<td>.14</td>
<td>.02</td>
</tr>
<tr>
<td>CY-IA</td>
<td>.15</td>
<td>.12</td>
<td>.17</td>
</tr>
</tbody>
</table>

EE = Emotional Exhaustion, CY = Cynicism, IA = Feelings of Inadequacy.

*p < .001

*p < .01

Figure 1. Significant autoregression and cross-lag parameters. All paths Significant at p<.01. Non-significant paths were estimated but not included in this figure.

sues of causal ordering that is much needed in stress and well-being research (Lazarus, 2000). However, it is important to note several important limitations of this research which provide avenues for future research. First, the current research consisted of self-report data. While, self-report data holds advantages over other approaches and is a logical choice when considering intra-psychic constructs such as the present (Crockett, Schulenberg, & Petersen, 1987; Howard, 1994), it does have several limitations (see Dewe & Trenberth, 2004; Schimtt, 1994 for a review). Second, in the current study, reliabilities for feelings of inadequacy were acceptable, particularly given the brevity of the scale, but moderate. This has implications for the validity of the results and suggests the need for further research with additional indicators of school burnout. As such, replication of the current results with other scales of school burnout, observational data and/or informant data is important for increasing the validity of the current findings. Third, the final model accounted for a moderate percentage of the variance in feelings of inadequacy. While consideration of covariates such as gender, motivational orientation, coping strategies, or school track was outside the scope of the current study, exploring the role of such variables maybe significant in provided a more comprehensive account of school burnout. Notwithstanding these limitations, the current research provided a strong test of the major developmental models of burnout with results suggesting a model in which emotional exhaustion and cynicism are initial and consistent predictors of feelings of inadequacy provided a significantly better fitting model than the alternative frameworks.

References


Guidance and Counselling, 32, 143-156.